

Traffic Impact Study 328 West 40th Place

Chicago, Illinois



Prepared For:

THE MISSNER | GROUP

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October 28, 2022

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I. Executive Summary

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed industrial building to be located at 328 West 40th Place in Chicago, Illinois. The objectives of the traffic study are as follows:

- Determine the existing vehicular, pedestrian, bicycle, and public transportation conditions in the study area to establish a base condition.
- Assess the impact that the proposed development will have on transportation conditions in the area.
- Determine any street, access, bicycle, and pedestrian modifications and/or improvements that will be necessary to effectively accommodate and mitigate future conditions.

Vehicle, pedestrian, and bicycle counts were conducted during the weekday morning and weekday evening peak periods at the intersections of Pershing Road and Root Street with Normal Avenue, Princeton Avenue, and Wells Street in order to determine the general peak hour of traffic activity during these time periods.

As proposed, the site will be developed with an approximately 180,900 square-foot multi-tenant industrial building. The development will provide a total of 176 parking spaces for employees, 38 spaces for trailer storage, and 35 truck loading bays. Access to the site is proposed to be provided via a full movement access drive off Root Street and two full movement access drives off Princeton Avenue.

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The truck traffic generated by the development is anticipated to have a limited impact on the street system as the majority of truck traffic is expected to arrive and depart the site outside of peak hours.
- Given the low clearance of the viaducts on Princeton Avenue (north of the site) and Root Street (west of the site), all truck traffic will approach and depart the site to and from the east on Root Street.
- Area intersections have sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway improvements or traffic control modifications are required.
- The proposed access system will be adequate in accommodating the traffic estimated to be generated by the proposed development.

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O’Hara, Aboona, Inc. (KLOA, Inc.) for a proposed industrial building to be located at 328 W. 40th Place in Chicago, Illinois. The site, which currently contains an AMM Metal Forming facility, is located in the northwest quadrant of the intersection of Root Street with Princeton Avenue. As proposed, the site will be redeveloped with a multi-tenant industrial building with approximately 180,900 square feet of space. Access to the site is proposed to be provided via a full movement access drive off Root Street and two full movement access drives off Princeton Avenue.

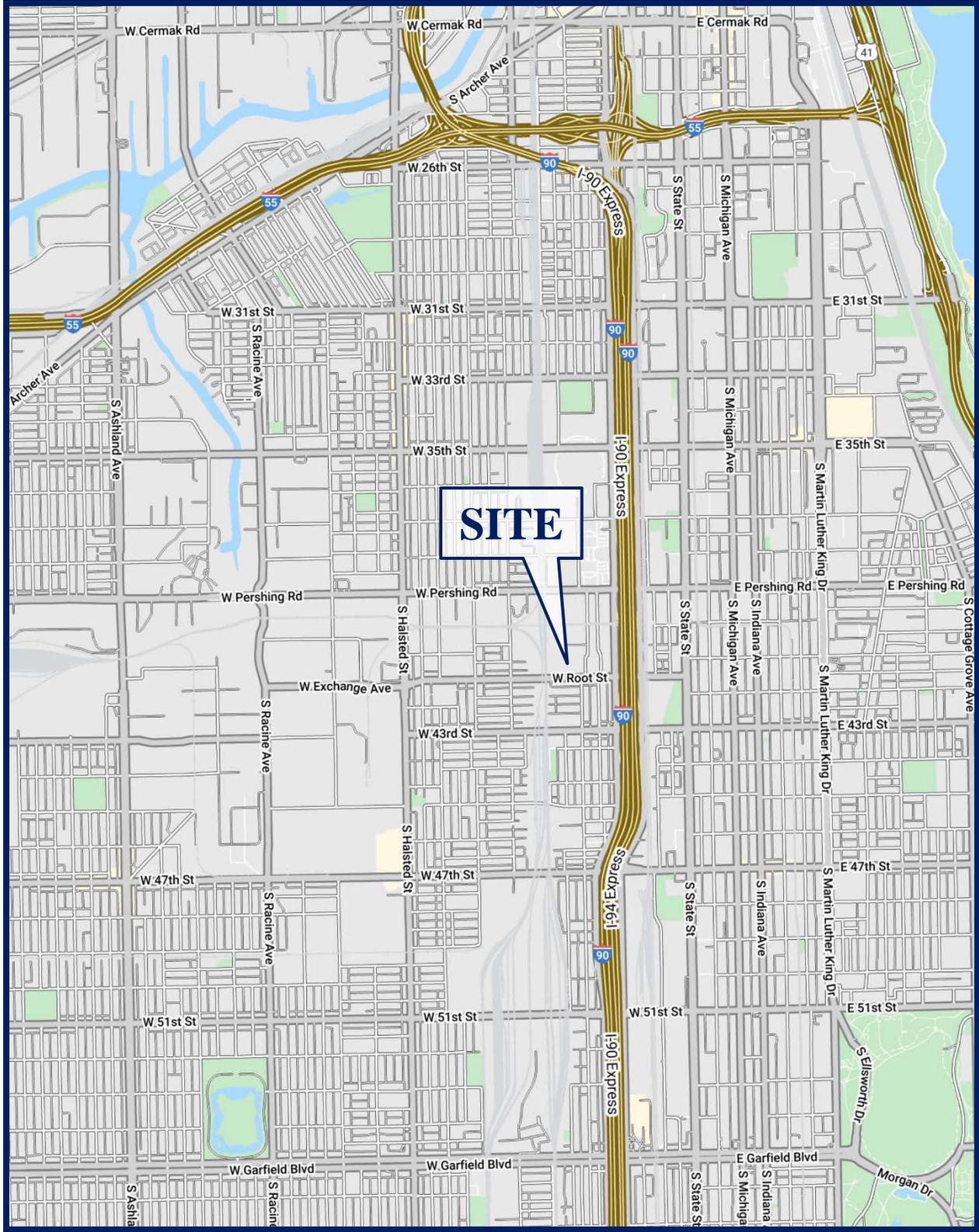
The purpose of this study was to examine existing traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any improvements to the transportation system are required to accommodate the proposed development. **Figure 1** shows the location of the site in relation to the area street system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing street conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Evaluation and recommendations with respect to adequacy of the site access, on-site circulation, and adjacent street system.

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Year 2022 Base Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes conducted in 2021 and 2022 adjusted to represent typical conditions.
2. Year 2028 Total Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2022 base traffic volumes, traffic projected to be generated by other area developments, ambient area growth not attributable to any particular development, and the traffic estimated to be generated by the proposed development.



Site Location

Figure 1

348 W 40th Place
Chicago, Illinois





Aerial View of Site
348 W 40th Place
Chicago, Illinois

Figure 2

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area street system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

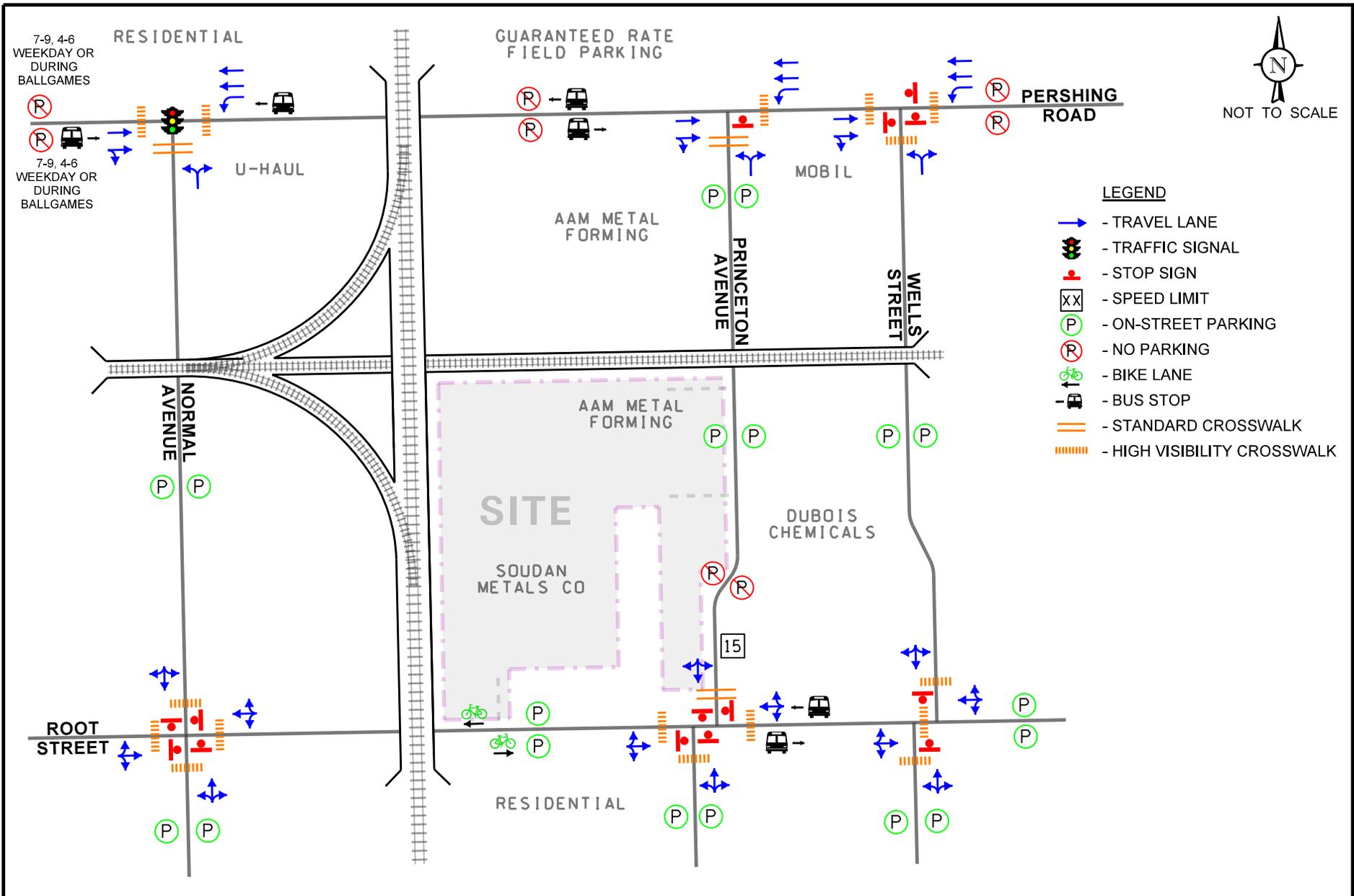
The site is generally bounded by Norfolk Southern Railway, Northeast Illinois Regional Commuter Corp., and Union Pacific railroad to the north and west, Princeton Avenue to the east and Root Street to the south. The area offers a mixture of residential, industrial, and commercial uses. Guaranteed Rate Field is located approximately one-half mile to the north.

Existing Street System Characteristics

The characteristics of the existing streets near the development are described below and illustrated in **Figure 3**. All streets are under the jurisdiction of the Chicago Department of Transportation (CDOT) unless otherwise noted.

Pershing Road is an east-west, principal arterial street that provides two lanes in each direction. At its signalized intersection with Normal Avenue, Pershing Road provides one through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane and two through lanes on the westbound approach. All legs of this intersection provide crosswalks with pedestrian countdown signals. At its unsignalized intersection with Princeton Avenue, Pershing Road provides one through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane and two through lanes on the westbound approach. The east and south legs of this intersection provide crosswalks. At its all-way stop sign-controlled intersection with Wells Street, Pershing Road provides one through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane and two through lanes on the westbound approach. The east and south legs of this intersection provide crosswalks. Parking is prohibited on both sides of the street between 7:00 A.M. and 9:00 A.M. and between 4:00 P.M. and 6:00 P.M. Monday through Friday and during ball games. Pershing Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), is designated as a Strategic Regional Arterial (SRA) route and carries an Annual Average Daily Traffic of 14,500 vehicles (IDOT 2018).

Root Street is an east-west, minor collector street that provides one lane in each direction. At its all-way stop sign-controlled intersection with Normal Avenue, Root Street provides a shared left-turn/through/right-turn lane on both approaches. All legs of this intersection provide high visibility crosswalks. At its all-way stop sign-controlled intersection with Princeton Avenue, Root Street provides a shared left-turn/through/right-turn lane on both approaches. All legs of this intersection provide high visibility crosswalks. At its unsignalized intersection with Wells Street, Root Street



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Industrial Development
Chicago, Illinois

Existing Roadway Characteristics

provides a shared left-turn/through/right-turn lane on both approaches. The east and north legs of this intersection provide high visibility crosswalks. Within the vicinity of the site, bike lanes are provided on both sides of Root Street and parking is generally permitted on both sides of the street. Root Street carries an AADT of 1,750 vehicles (IDOT 2018).

Normal Avenue is a north-south local street that provides one lane in each direction. At its signalized intersection with Pershing Road, Normal Avenue provides a shared left-turn/right-turn lane on the northbound approach. It should be noted that access between Pershing Road and the north leg of Normal Avenue is prohibited. All legs of this intersection provide high visibility crosswalks and pedestrian countdown timers. At its all-way stop sign-controlled intersection with Root Street, Normal Avenue provides a shared left-turn/through/right-turn lane on both approaches. All legs of this intersection provide high visibility crosswalks. Within the vicinity of the site parking is generally permitted on both sides of the street. Normal Avenue carries an AADT of 825 vehicles (IDOT 2018).

Princeton Avenue is a north-south, local street that provides one lane in each direction. At its unsignalized intersection with Pershing Road, Princeton Avenue provides a shared left-turn/through/right-turn lane on the northbound approach and is under stop sign control. The east and south legs of this intersection provide crosswalks. At its all-way stop sign-controlled intersection with Root Street, Princeton Avenue provides a shared left-turn/through/right-turn lane on both approaches. All legs of this intersection provide crosswalks. Within the vicinity of the site parking is generally permitted on both sides of the street except between Root Street and the AAM Metal Forming access drive. Through its curve north of Root Street, Princeton Avenue has a posted speed limit of 15 miles per hour. Between Pershing Road and Root Street, Princeton Avenue has a low clearance viaduct under the railroad tracks and that cannot accommodate truck traffic. Princeton Avenue carries an AADT of 775 vehicles (IDOT 2018).

Wells Street is a north-south, local street that provides one lane in each direction. At its all-way stop sign-controlled intersection with Pershing Road, Wells Street provides a shared left-turn/through/right-turn lane on the northbound approach. The east and south legs of this intersection provide crosswalks. At its unsignalized intersection with Root Street, Wells Street provides a shared left-turn/through/right-turn lane on both approaches. The north and west legs of this intersection provide crosswalks. Within the vicinity of the site parking is generally permitted on both sides of the street. Wells Street carries an AADT of 300 vehicles (IDOT 2018).

Alternative Modes of Transportation

Accessibility to and from the area is enhanced by the various alternative modes of transportation serving the area as summarized below.

Public Transportation. The area is served by the Chicago Transit Authority (CTA) rapid transit via the Sox-35th Red Line station located approximately three-quarters of a mile northeast of the site. The CTA Red Line operates 24 hours a day, seven days a week between Howard Street and the 95th/Dan Ryan station located along the Dan Ryan Expressway at 95th Street. Additional service is provided via the Green Line tracks between the Cermak-McCormick Place station and the Ashland/63rd station during rush periods only.

In addition, the following bus routes serve the immediate area and have stops near the facility:

Route 24 (Wentworth) provides north-south service between Wacker Drive to the north and 79th Street to the south generally along LaSalle Street and Wentworth Avenue. Service is provided Monday through Friday generally from 5:00 A.M. to 9:30 P.M. Supplementary service may be provided as far south as 87th Street, including stops at Simeon Career Academy and the Gresham Metra Station.

Route 39 (Pershing) generally runs along Pershing Road between the Lake Park Avenue and St. Louis Avenue. It operates daily, including holidays, from approximately 5:00 A.M. to 10:00 P.M. on weekdays and from approximately 7:30 A.M. to 5:15 P.M. on Saturdays.

Route 43 (43rd) generally runs along 43rd Street and Root Street between the Oakenwald Avenue and Halsted Avenue. It operates daily, including holidays, from approximately 5:00 A.M. to 8:10 P.M. on weekdays and from approximately 6:40 A.M. to 6:50 P.M. on Saturdays.

Route 44 (Wallace-Racine) generally runs along Wallace and Racine between the Halsted Orange Line Station and 87th Street. It operates daily, including holidays, from approximately 4:30 A.M. to 11:00 P.M. on weekdays and from approximately 8:00 A.M. to 7:30 P.M. on Saturdays.

Pedestrian Accommodations. Sidewalks and high-visibility crosswalks are generally provided on the majority of the streets within the study area.

Bike Facilities. Root Street provides dedicated bike lanes in both directions. According to the City of Chicago's *Streets for Cycling Plan 2020*, Pershing Road is designated as a crosstown Bike Route and Root Street and Normal Avenue are designated as a neighborhood bike routes.

Year 2022 Base Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic counts using Miovision Scout Video Collection Units on Tuesday, June 21, 2022 during the weekday morning (6:00 A.M. to 9:00 A.M.) and weekday evening (3:00 P.M. to 6:00 P.M.) peak periods at the following intersections:

- Pershing Road with Princeton Avenue
- Pershing Road with Wells Street
- Root Street with Princeton Avenue
- Root Street with Wells Street

The results of the traffic counts indicated that the weekday morning peak hour of traffic occurs from 7:30 A.M. to 8:30 A.M. and the weekday evening peak hour of traffic occurs from 4:00 P.M. to 5:00 P.M. These counts were supplemented with counts conducted at the intersections of Pershing Road with Normal Avenue and Root Street with Normal Avenue in 2021. Copies of the traffic count summary sheets are included in the Appendix.

In order to ensure that the Year 2022 traffic counts represent normal traffic conditions, the traffic volumes were compared with hourly counts previously conducted by IDOT on Pershing Road in 2018. Based on the 2018 counts, the 2022 traffic counts were increased by 30 percent during the weekday morning peak hour and 10 percent during the weekday evening peak hour.

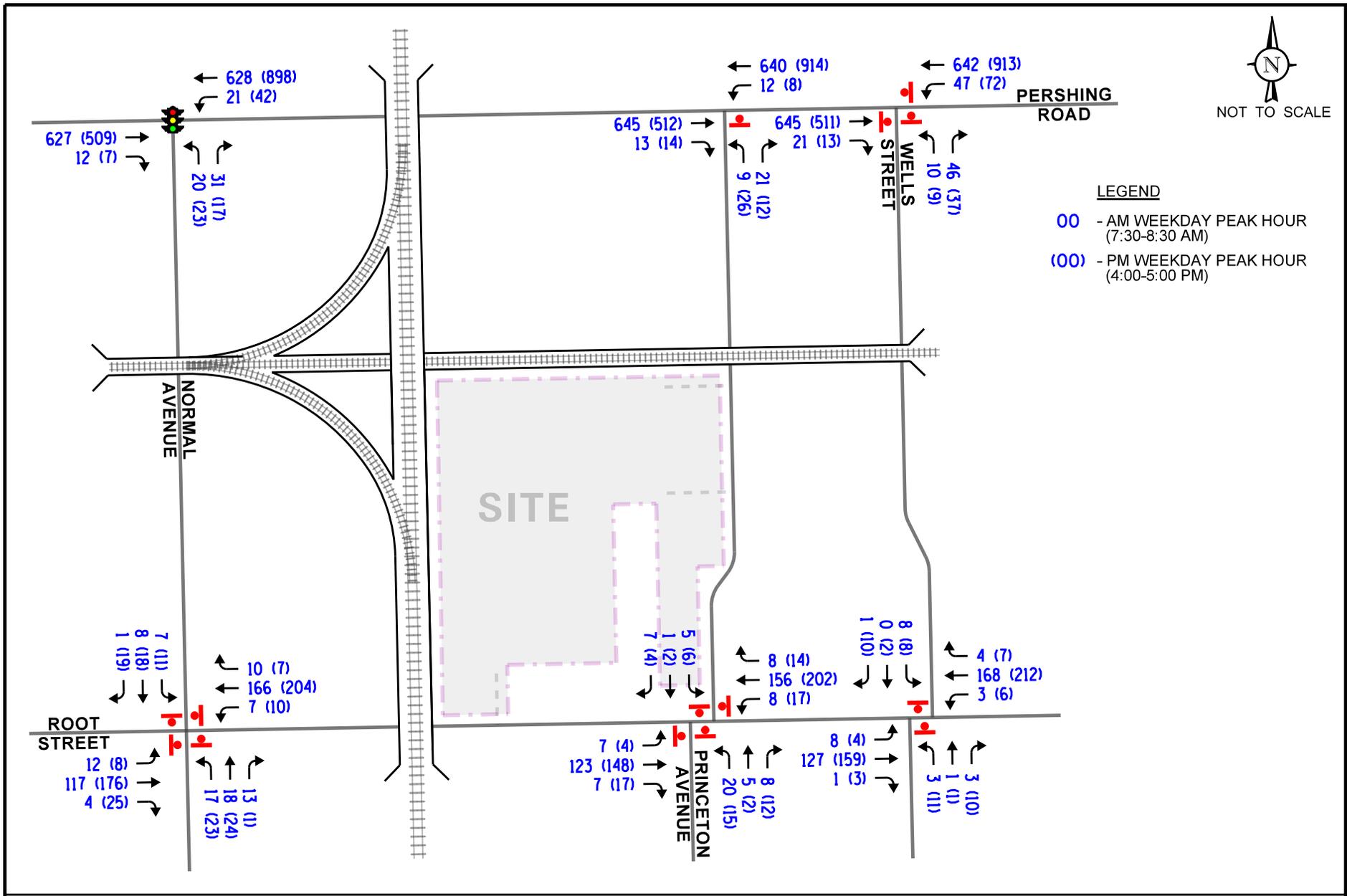
Figure 4 illustrates the Year 2022 base peak hour vehicle traffic volumes, inclusive of heavy vehicles. **Figure 5** illustrates the Year 2022 base heavy vehicle peak hour traffic volumes. **Figure 6** illustrates the existing pedestrian and bicycle volumes, showing direction of travel.



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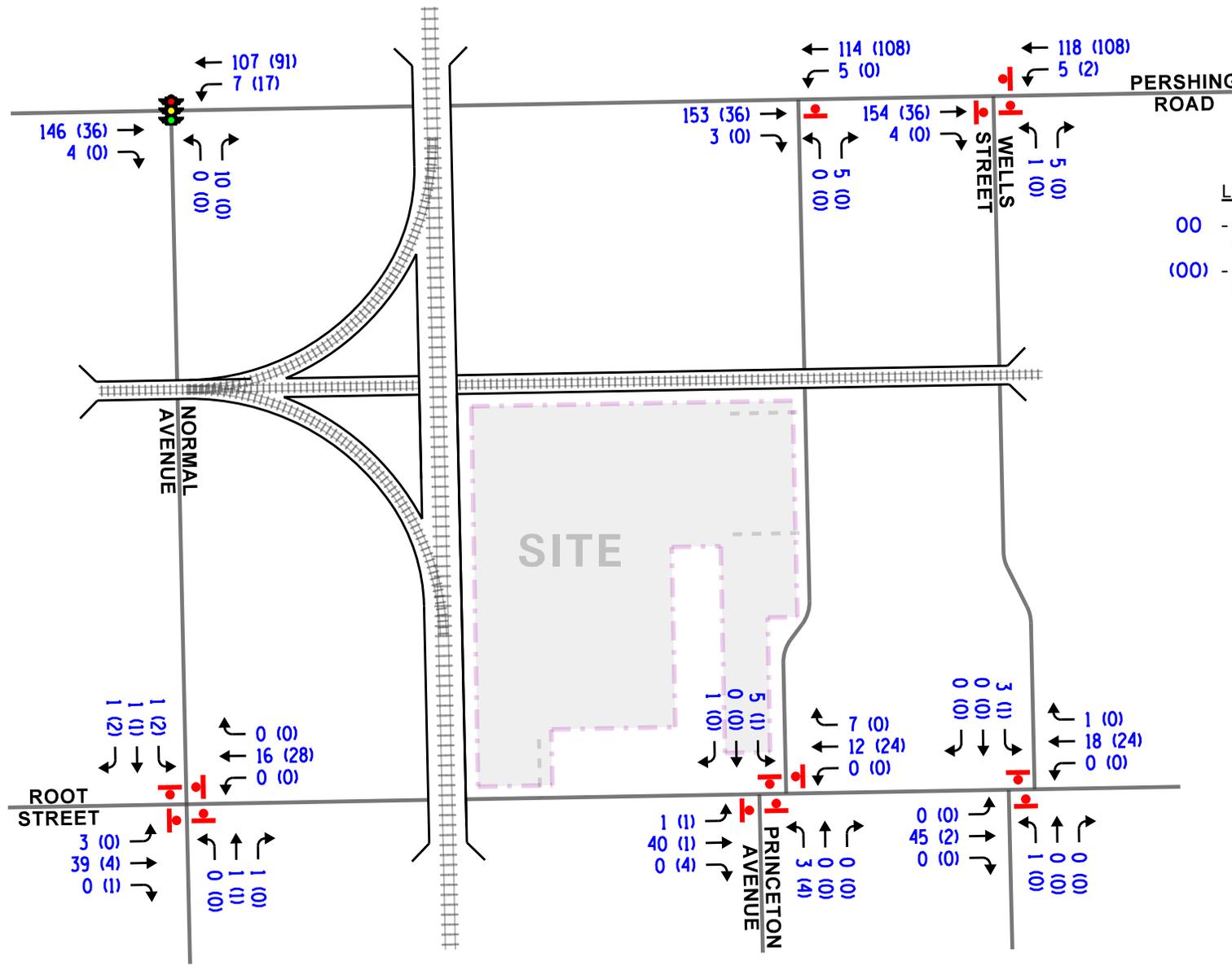
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 Industrial Development
 Chicago, Illinois

Year 2022 Base Traffic Volumes



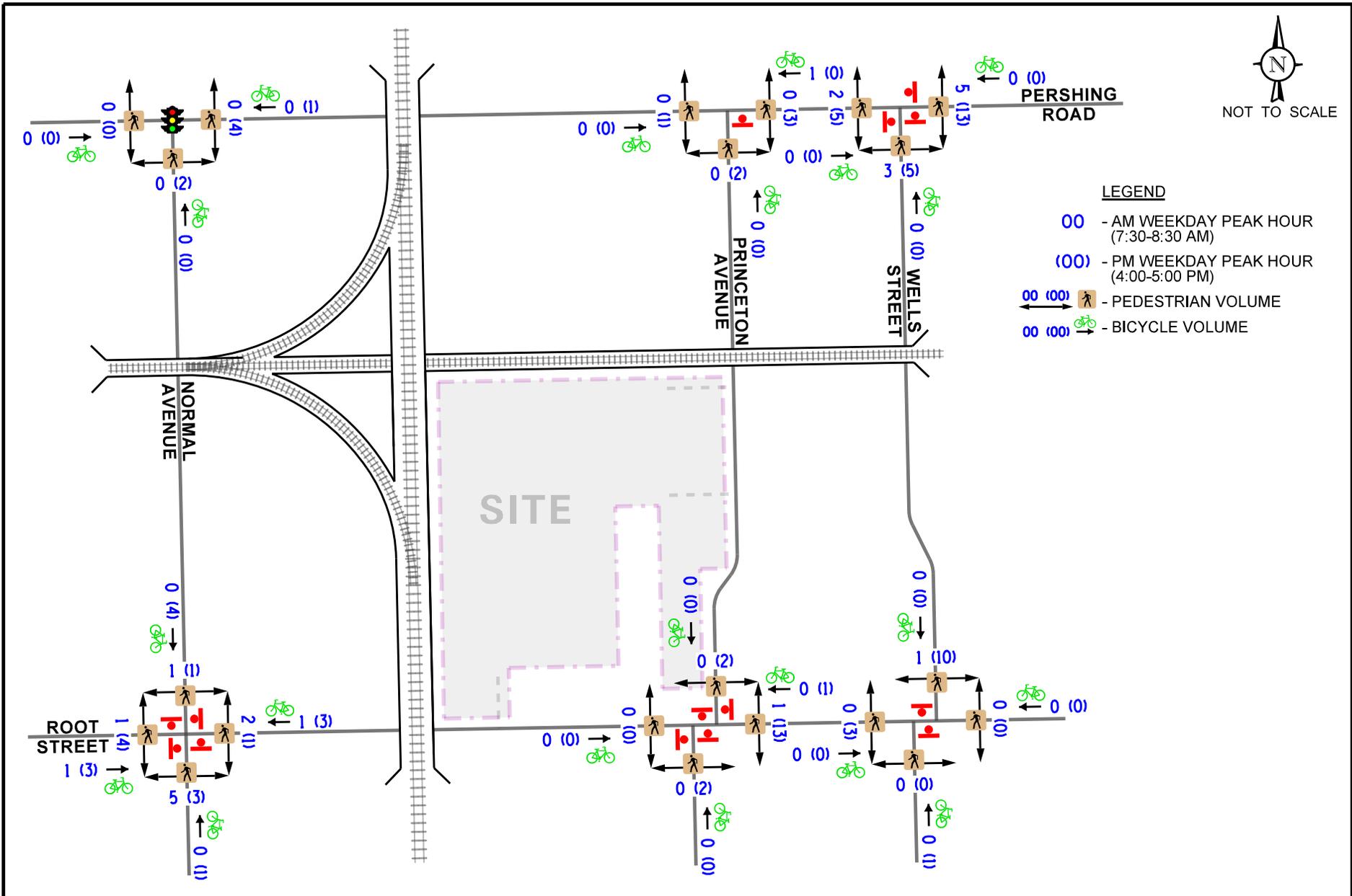
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Year 2022 Base Traffic Volumes - Heavy Vehicles



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Existing Pedestrian and Bicycle
Traffic Volumes

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Development Plan

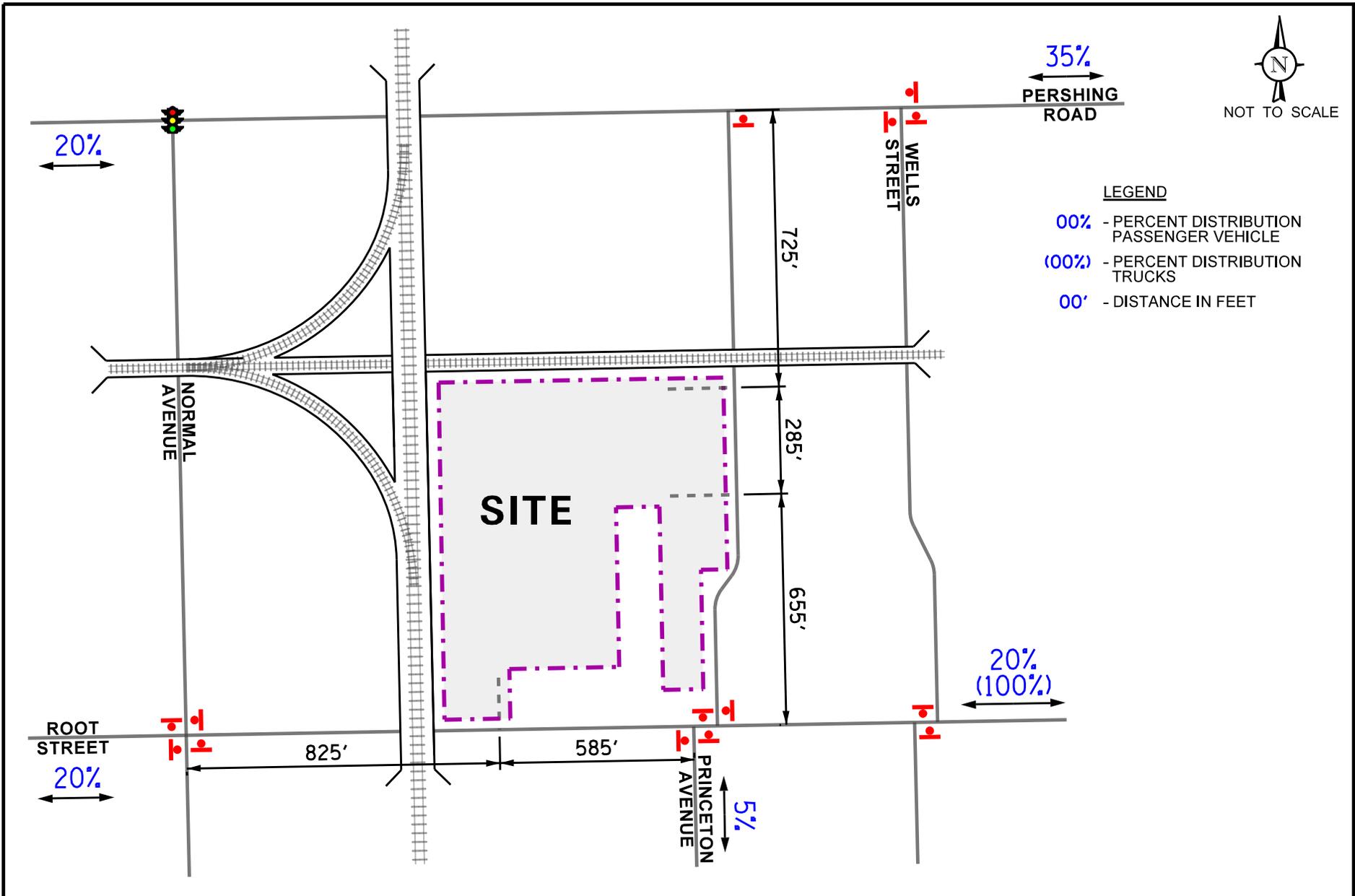
As proposed, the site will be developed with an approximately 180,900 square-foot multi-tenant industrial building. The development will provide 176 parking spaces for employees on the east and south sides of the building. 35 truck loading bays will be provided on the west side of the building and 38 trailer storage spaces will be provided on the east side of the site. Access to the development is proposed to be provided as follows:

- A full movement access drive on the north side of Root Street located approximately 585 feet west of Princeton Road. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve passenger vehicles only.
- A full movement access drive on the west side of Princeton Avenue located approximately 725 feet south of Pershing Road. This access drive will provide one inbound lane and one outbound lane wide enough to accommodate truck turning movements. Outbound movements will be under stop sign control. This access drive will serve passenger vehicles and trucks.
- A full movement access drive on the west side of Princeton Avenue located approximately 655 feet north of Root Street. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve passenger vehicles only.

As indicated earlier, given the low clearance of the viaducts on Princeton Avenue (north of the site) and Root Street (west of the site), all truck traffic will approach and depart the site to and from the east on Root Street. Furthermore, the proposed development will replace an existing curb cut on Root Street and two existing curb cuts on Princeton Avenue. A copy of the preliminary site plan is included in the appendix.

Directional Distribution

The directions from which traffic will approach and depart the site was estimated based on existing travel patterns, as determined from the traffic counts and the proposed access system of the development. It should be noted that given the low clearance viaduct on Princeton Avenue, all truck traffic will be required to approach and depart the site via Root Street. **Figure 7** illustrates the directional distribution of traffic.



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Chicago, Illinois

Directional Distribution



Job No: 22-172

Figure: 7

Development-Generated Traffic Volumes

The total number of peak hour vehicle trips estimated to be generated by the proposed development was based on General Light Industrial (Land-Use Code 110) vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). **Table 1** summarizes the trips projected to be generated by the development during the peak hours and on a daily basis. **Table 2** summarizes the trips projected to be generated by the development throughout the day. Copies of the ITE trip generation rates are included in the Appendix. It should be noted that given the location of the site within an urban area and the proximity of the site to public transportation and alternative modes of transportation, the number of passenger vehicle trips will be reduced. However, to provide a conservative analysis, no reduction was applied.

Table 1

ESTIMATED DAILY AND PEAK HOUR SITE GENERATED TRAFFIC

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Trips	
		In	Out	Total	In	Out	Total	In	Out
		110	General Light Industrial (180,900 s.f.)	112	15	127	16	112	128
	Trucks	2	2	4	1	1	2	23	23
	Passenger Vehicles	110	13	123	15	111	126	343	343

Table 2

ESTIMATED 24-HOUR SITE GENERATED TRAFFIC

Hour	General Light Industrial (ITE Land-Use Code 110) – 180,900 s.f.								
	Trucks			Passenger Vehicles			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
0:00	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
4:00	0	0	0	2	0	2	2	0	2
5:00	0	0	0	15	1	16	15	1	16
6:00	0	0	0	20	2	22	20	2	22
7:00	2	1	3	49	5	54	51	6	57
8:00	2	2	4	110	13	123	112	15	127
9:00	4	4	8	17	17	34	21	21	42
10:00	3	4	7	19	18	37	22	22	44
11:00	2	1	3	16	23	39	18	24	42
12:00	2	2	4	23	29	52	25	31	56
13:00	3	3	6	21	18	39	24	21	45
14:00	2	2	4	18	23	41	20	25	45
15:00	2	2	4	15	30	45	17	32	49
16:00	1	1	2	15	111	126	16	112	128
17:00	0	1	1	3	46	49	3	47	50
18:00	0	0	0	0	7	7	0	7	7
19:00	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
Total	23	23	46	343	343	686	366	366	732

Based on daily trips (Table 1) and ITE's Hourly Distribution of Entering and Exiting Truck Trips and Vehicle Trips tables.

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed development.

Development Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed development were assigned to the street system in accordance with the previously described directional distribution (Figure 7). **Figure 8** illustrates the traffic assignment of the new passenger vehicle trips for the development. **Figure 9** illustrates the traffic assignment of the new truck trips for the development.

Other Area Developments

To account for the traffic to be generated by the other future developments in the area, the traffic impact study also included proposed developments and developments currently under construction in the vicinity of the study area.

3900 S Normal Avenue will be located on the west side of Normal Avenue between Pershing Road and Root Street and will consist of an approximately 170,493 square-foot multi-tenant industrial building. The volume of traffic projected to be generated by this development was based on the KLOA, Inc. traffic impact study dated May 27, 2021.

1032 W 43rd Street will be located west of Morgan Street side between Exchange Avenue and 43rd Street and will consist of an approximately 130,354 square-foot multi-tenant industrial building. The volume of traffic projected to be generated by this development was based on the KLOA, Inc. traffic impact study dated August 23, 2021.

Ambient Traffic Growth

To account for any additional increase in traffic due to other factors or developments not previously discussed, an ambient growth factor of 0.5 percent per year was also applied to the study area over a six-year period to represent Year 2028 conditions. Furthermore, in order to account for the increase in population in the study area, bicycle and pedestrian volumes were increased by 10 percent at each intersection. **Figure 10** illustrates the Year 2028 No Build Volumes which include the Year 2022 Base traffic volumes increased by the ambient growth factor and the traffic projected to be generated by the other area developments.

Total Projected Traffic Volumes

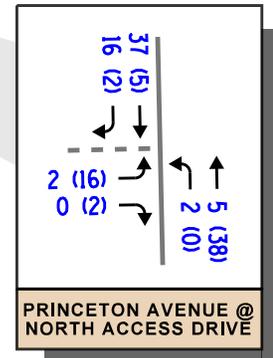
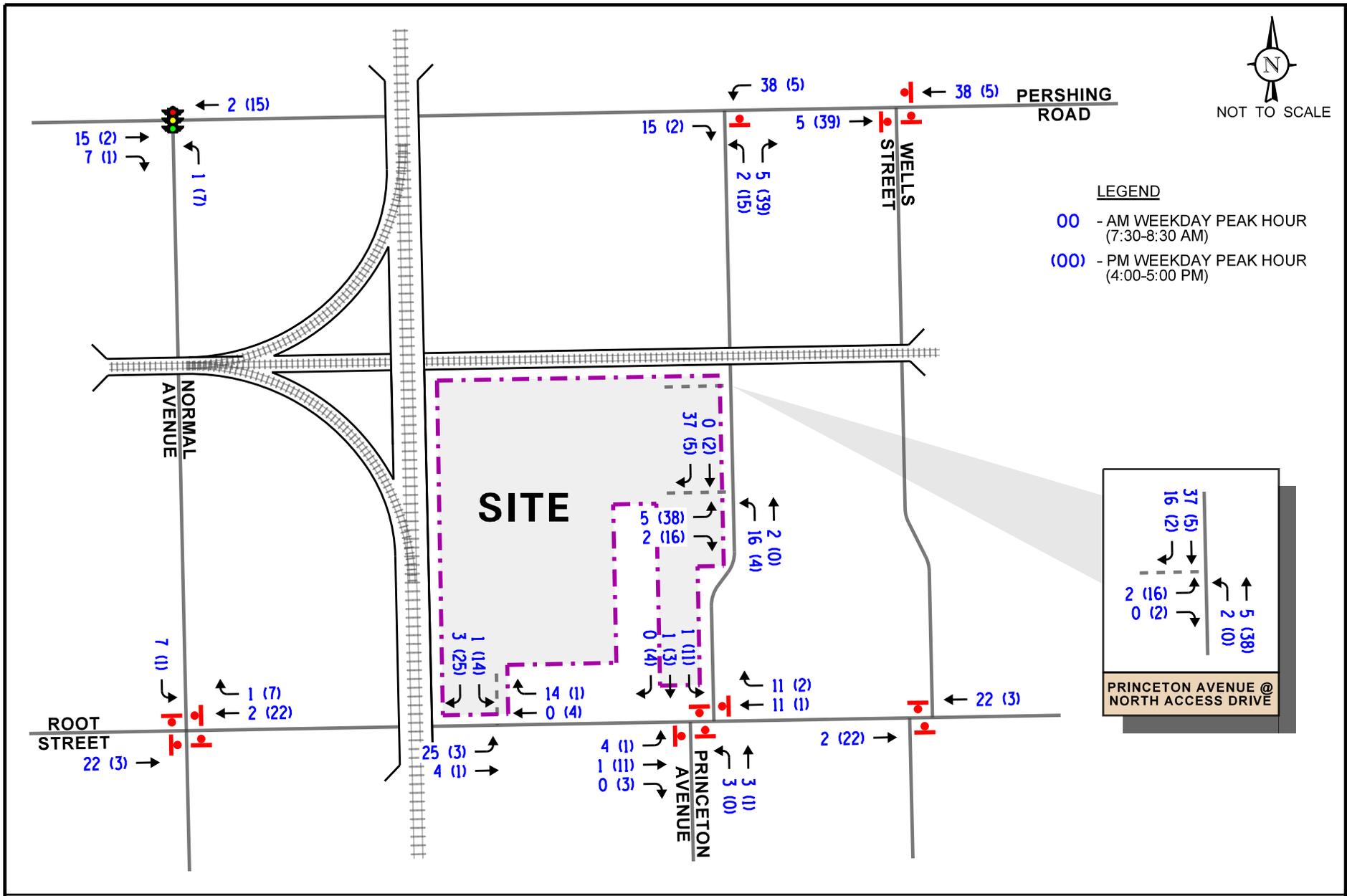
The Year 2028 No Build volumes were combined with the new peak hour traffic volumes generated by the proposed development to determine the Year 2028 total traffic volumes, shown in **Figure 11**.



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Site-Generated Traffic Volumes - Passenger Vehicles

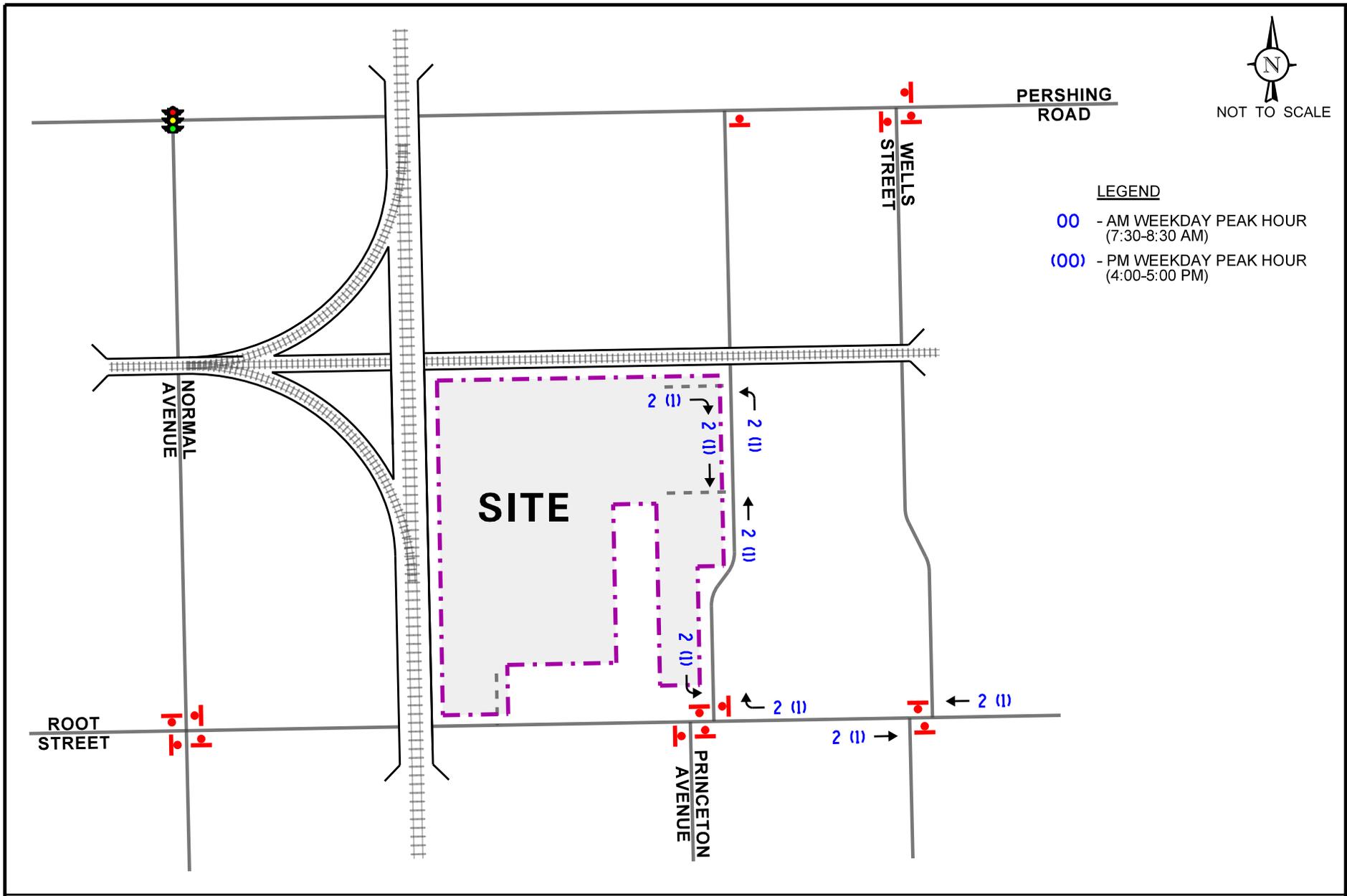




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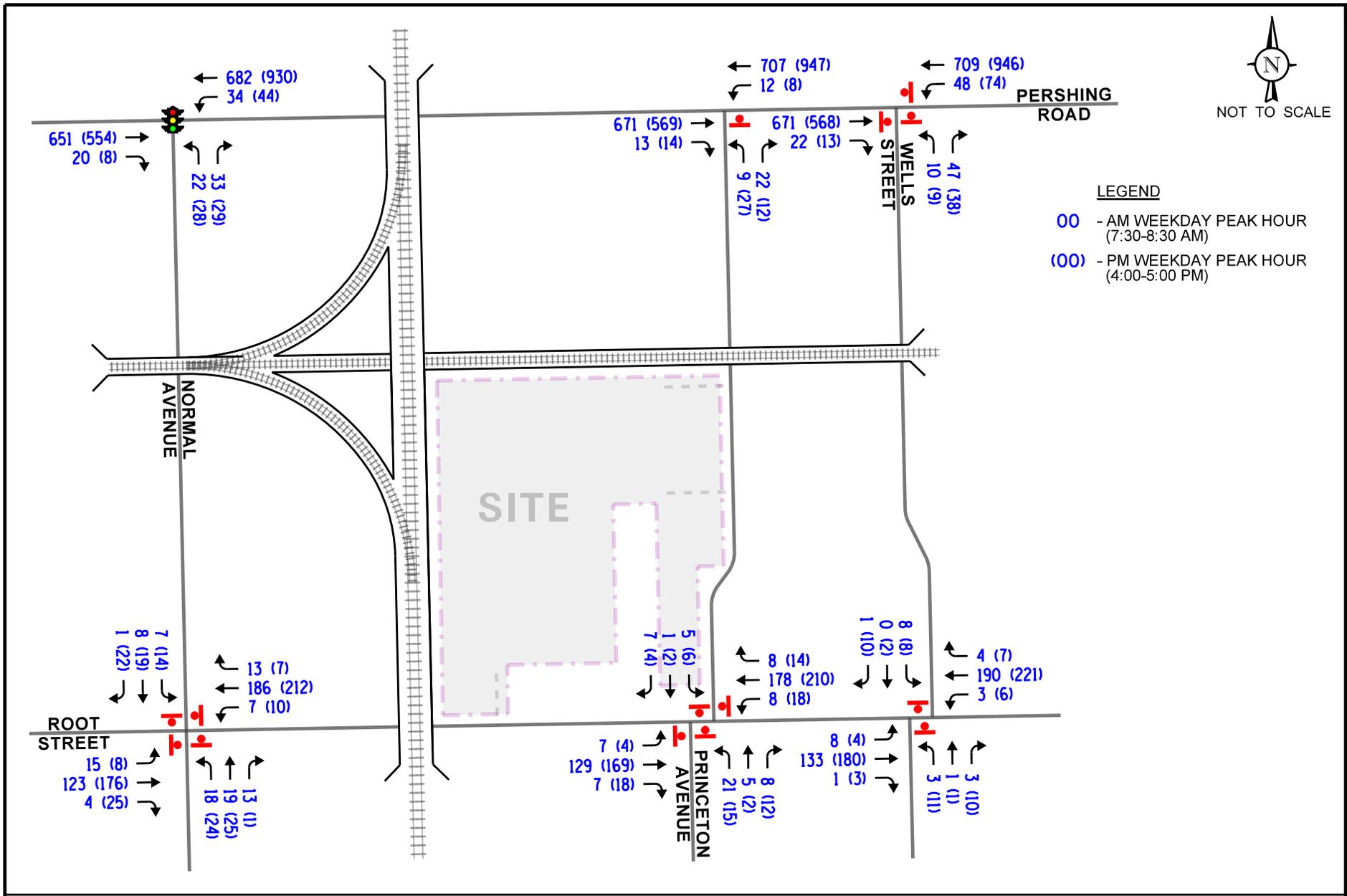
Site-Generated Traffic Volumes - Trucks



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 Industrial Development
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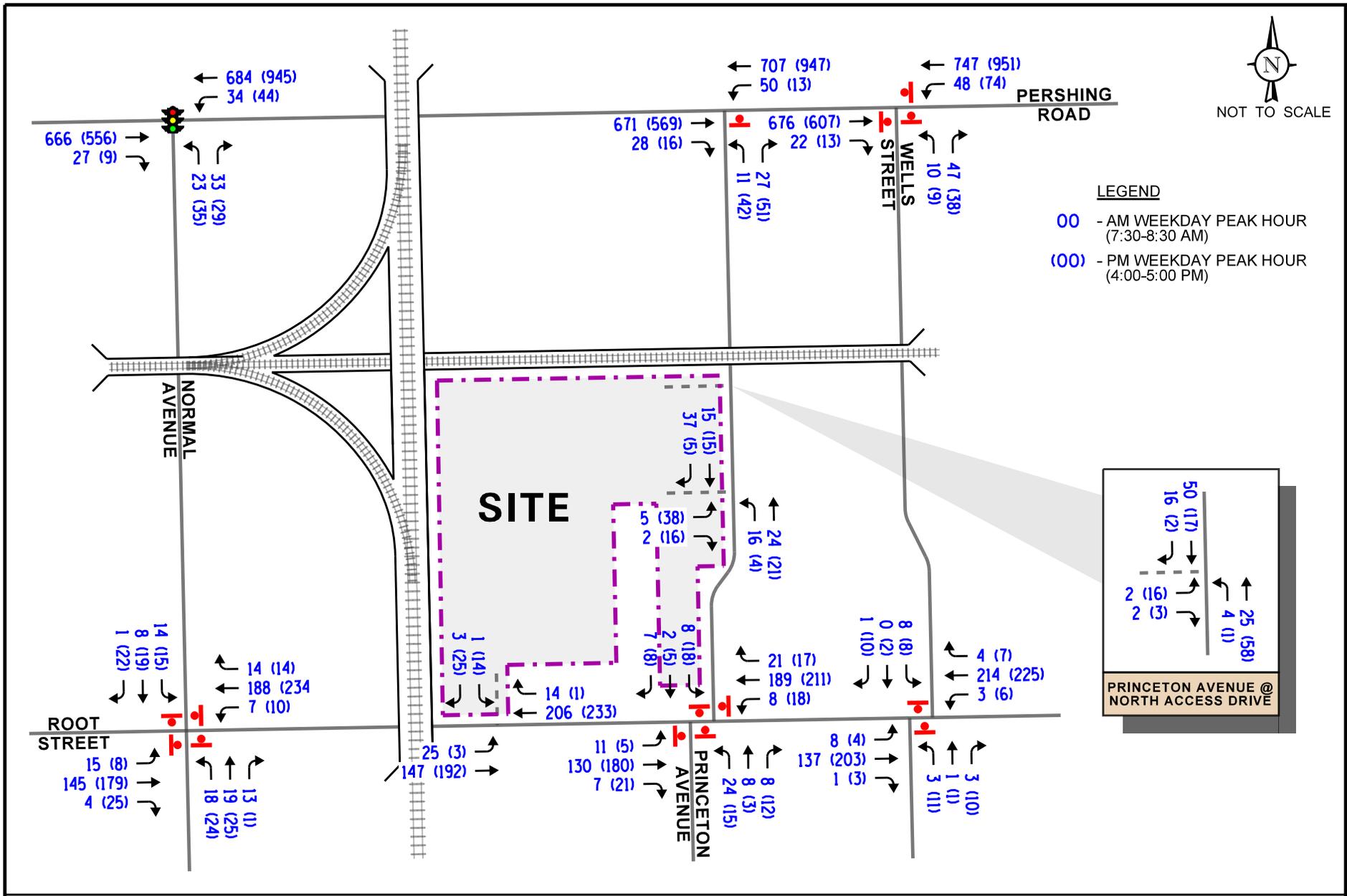
Year 2028 No-Build Traffic Volumes



NOT TO SCALE

LEGEND

- 00** - AM WEEKDAY PEAK HOUR (7:30-8:30 AM)
- (00)** - PM WEEKDAY PEAK HOUR (4:00-5:00 PM)



328 W. 40th Place
Industrial Development
Chicago, Illinois

Year 2028 Total Projected Traffic Volumes



5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the street system and access drives are projected to operate and whether any street improvements or modifications are required.

Traffic Analyses

Intersection analyses were performed for the weekday morning and weekday evening peak hours for the Year 2022 base and Year 2028 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition* and analyzed using Synchro/SimTraffic 11 software. The analysis for the signalized intersections were conducted utilizing actual cycle lengths, phasings, and offsets.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the Year 2022 base and Year 2028 total projected conditions are presented in **Tables 3** through **5**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 3

CAPACITY ANALYSIS RESULTS – PERSHING ROAD WITH NORMAL AVENUE

	Peak Hour	Eastbound	Westbound		Northbound	Overall
		T/R	L/T		L/R	
Year 2022 Base Conditions	Weekday Morning Peak Hour	A 8.5	A 9.9	B 11.5	A 8.0	A 9.9
			B – 11.4			
	Weekday Evening Peak Hour	A 7.0	B 10.5	B 12.9	A 9.5	B 10.7
			B – 12.8			
Year 2028 Total Projected Conditions	Weekday Morning Peak Hour	A 8.6	B 11.7	B 11.9	A 8.1	B 10.2
			B – 11.9			
	Weekday Evening Peak Hour	A 6.8	B 11.0	B 13.4	A 9.2	B 10.9
			B – 13.3			
Letter denotes Level of Service Delay is measured in seconds.		L – Left-Turns T – Through		R – Right-Turns		

Table 4

CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – YEAR 2022 BASE CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Pershing Road with Princeton Avenue¹				
• Westbound Left Turn	B	10.5	A	8.5
• Northbound Approach	C	15.2	C	19.0
Pershing Road with Wells Street²				
• Overall	C	18.8	C	16.6
• Eastbound Approach	D	26.0	C	17.8
• Westbound Approach	B	12.4	C	16.2
• Northbound Approach	B	10.9	B	10.6
Root Street with Normal Avenue²				
• Overall	A	8.6	A	9.2
• Eastbound Approach	A	8.9	A	9.1
• Westbound Approach	A	8.6	A	8.6
• Northbound Approach	A	8.0	A	8.6
• Southbound Approach	A	8.2	A	8.7
Root Street with Princeton Avenue²				
• Overall	A	8.6	A	9.1
• Eastbound Approach	A	8.5	A	9.2
• Westbound Approach	A	8.5	A	9.1
• Northbound Approach	A	8.3	A	8.5
• Southbound Approach	A	9.4	A	8.3
Root Street with Wells Street¹				
• Eastbound Left Turn	A	7.6	A	7.8
• Westbound Left Turn	A	7.5	A	7.6
• Northbound Approach	B	10.7	B	11.0
• Southbound Approach	B	11.9	B	11.3
1 – Two-Way Stop Sign Control	LOS = Level of Service			
2 – All-Way Stop Sign Control	Delay is measured in seconds.			

Table 5
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – YEAR 2028 PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Pershing Road with Princeton Avenue¹				
• Westbound Left Turn	A	9.5	A	8.7
• Northbound Approach	C	17.4	C	20.2
Pershing Road with Wells Street²				
• Overall	C	22.5	C	20.7
• Eastbound Approach	D	32.2	C	24.3
• Westbound Approach	B	14.7	C	19.0
• Northbound Approach	B	11.2	B	10.9
Root Street with Normal Avenue²				
• Overall	A	9.1	A	9.7
• Eastbound Approach	A	9.6	A	9.6
• Westbound Approach	A	9.0	B	10.2
• Northbound Approach	A	8.2	A	8.9
• Southbound Approach	A	8.4	A	9.0
Root Street with Princeton Avenue²				
• Overall	A	9.0	A	9.5
• Eastbound Approach	A	8.8	A	9.7
• Westbound Approach	A	9.1	A	9.5
• Northbound Approach	A	8.5	A	8.8
• Southbound Approach	A	9.5	A	8.6
Root Street with Wells Street¹				
• Eastbound Left Turn	A	7.8	A	7.8
• Westbound Left Turn	A	7.5	A	7.7
• Northbound Approach	B	11.1	B	11.6
• Southbound Approach	B	12.7	B	11.7
1 – Two-Way Stop Sign Control	LOS = Level of Service			
2 – All-Way Stop Sign Control	Delay is measured in seconds.			

Table 5 - Continued

CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – YEAR 2028 PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Root Street with the Proposed Site Access Drive¹				
• Eastbound Left Turn	A	7.7	A	7.7
• Southbound Approach	A	9.9	B	10.5
Princeton Avenue with the North Proposed Access Drive¹				
• Eastbound Approach	A	9.3	A	8.9
• Northbound Left Turn	A	7.8	A	8.2
Princeton Avenue with the South Proposed Access Drive¹				
• Eastbound Approach	A	8.9	A	8.9
• Northbound Left Turn	A	7.3	A	7.2
1 – Two-Way Stop Sign Control	LOS = Level of Service			
2 – All-Way Stop Sign Control	Delay is measured in seconds.			

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any street and traffic control improvements necessary to accommodate the development-generated traffic.

Pershing Road with Normal Avenue

The results of the capacity analysis indicate that overall, this intersection currently operates at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour. Furthermore, all the intersection movements operate at LOS B or better during both peak hours.

Under Year 2028 total projected conditions, this intersection overall is projected to operate at LOS B during both peak hours with increases in delay of less than one second. Furthermore, all the intersection movements are projected to continue to operate at LOS B or better during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic signal modifications will be required.

Pershing Road with Princeton Avenue

The results of the capacity analysis indicate that the northbound approach at this intersection operates At LOS C during the weekday morning and weekday evening peak hours. Further, the westbound left turn movement operates at LOS B or better during both peak hours.

Under Year 2028 total projected conditions, the northbound approach is projected to continue to operate at LOS C during both peak hours with increases in delay of approximately two seconds or less. Further, the westbound left turn movement is projected to operate at LOS A during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic control modifications will be required.

Pershing Road with Wells Street

The results of the capacity analysis indicate that this all-way stop sign control intersection currently operate at an overall LOS C during the weekday morning and weekday evening peak hours. It should be noted that the eastbound approach currently operates at LOS D during the weekday morning peak hour. This delay is the result of the high volume of existing through traffic on Pershing Road.

Under Year 2028 total projected conditions, this intersection is projected to continue to operate at LOS C during both peak hours with increases in delay of approximately four seconds. Further, all intersection approaches are projected to continue to operate at the same LOS during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic control modifications will be required.

Root Street with Normal Avenue

The results of the capacity analysis indicate that this all-way stop sign control intersection currently operate at an overall LOS A during the weekday morning and weekday evening peak hours. Further, all intersection approaches operate at LOS A during both peak hours.

Under Year 2028 total projected conditions, this intersection is projected to continue to operate LOS A during both peak hours with increases in delay of less than one second. Further, all intersection approaches are projected to operate at LOS B or better during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic control modifications will be required.

Root Street with Princeton Avenue

The results of the capacity analysis indicate that this all-way stop sign control intersection currently operate at an overall LOS A during the weekday morning and weekday evening peak hours. Further, all intersection approaches operate at LOS A during both peak hours.

Under Year 2028 total projected conditions, this intersection is projected to continue to operate LOS A during both peak hours with increases in delay of less than one second. Further, all intersection approaches are projected to continue to operate at LOS A during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic control modifications will be required.

Root Street with Wells Street

The results of the capacity analysis indicate that the northbound and southbound approaches at this intersection operate At LOS B during the weekday morning and weekday evening peak hours. Further, the eastbound and westbound left turn movements operate at LOS A during both peak hours.

Under Year 2028 total projected conditions, the northbound and southbound approaches are projected to continue to operate at LOS B during both peak hours with increases in delay of less than one second. Further, the eastbound and westbound left turn movements are projected to continue to operate at LOS A during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no street improvements or traffic control modifications will be required.

Root Street with the Proposed Site Access Drive

As proposed, a full movement access drive will be provided on Root Street located approximately 585 feet west of Princeton Road. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve employees only.

The results of the capacity analysis indicate that outbound movements from the access drive to Root Street are projected to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour. Further, the eastbound left-turn movement from Root Street to the access drive is projected to operate at LOS A during both peak hours. As such, this access drive will be adequate in accommodating the traffic generated by the development.

Princeton Avenue with the North Proposed Site Access Drive

As proposed, a full movement access drive will be provided on Princeton Avenue located approximately 725 feet south of Pershing Road. This access drive will provide one inbound lane and one outbound lane wide enough to accommodate truck turning movements. Outbound movements will be under stop sign control. This access drive will serve employees and trucks.

The results of the capacity analysis indicate that outbound movements from the access drive to Princeton Avenue are projected to operate at LOS A during the weekday morning and weekday evening peak hours. Further, the northbound left-turn movement from Princeton Avenue to the access drive is projected to operate at LOS A during both peak hours. As such, this access drive will be adequate in accommodating the traffic generated by the development.

Princeton Avenue with the South Proposed Site Access Drive

As proposed, a full movement access drive will be provided on Princeton Avenue located approximately 655 feet north of Root Street. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve employees only.

The results of the capacity analysis indicate that outbound movements from the access drive to Princeton Avenue are projected to operate at LOS A during the weekday morning and weekday evening peak hours. Further, the northbound left-turn movement from Princeton Avenue to the access drive is projected to operate at LOS A during both peak hours. As such, this access drive will be adequate in accommodating the traffic generated by the development.

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- Access to the development is proposed to be provided as follows:
 - A full movement access drive on the north side of Root Street located approximately 585 feet west of Princeton Road. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve passenger vehicles only.
 - A full movement access drive on the west side of Princeton Avenue located approximately 725 feet south of Pershing Road. This access drive will provide one inbound lane and one outbound lane wide enough to accommodate truck turning movements. Outbound movements will be under stop sign control. This access drive will serve passenger vehicles and trucks.
 - A full movement access drive on the west side of Princeton Avenue located approximately 655 feet north of Root Street. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will serve passenger vehicles only.
- The truck traffic generated by the development is anticipated to have a limited impact on the street system as the majority of truck traffic is expected to arrive and depart the site outside of peak hours.
- Given the low clearance of the viaducts on Princeton Avenue (north of the site) and Root Street (west of the site), all truck traffic will approach and depart the site to and from the east via Root Street.
- Area intersections have sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development and no roadway improvements or traffic control modifications are required.
- The proposed access system will be adequate in accommodating the traffic estimated to be generated by the development.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Worksheets
Level of Service Criteria
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Pershing Road with Normal Avenue
 Site Code:
 Start Date: 04/27/2021
 Page No: 1

Turning Movement Data

Start Time	Pershing Road Eastbound			Pershing Road Westbound					Normal Avenue Northbound				Int. Total	
	Thru	Right	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds		App. Total
6:00 AM	81	1	82	0	2	102	0	104	0	2	4	0	6	192
6:15 AM	96	0	96	0	3	117	0	120	0	1	4	0	5	221
6:30 AM	101	2	103	0	2	140	0	142	0	2	3	0	5	250
6:45 AM	93	0	93	0	6	157	0	163	0	2	4	0	6	262
Hourly Total	371	3	374	0	13	516	0	529	0	7	15	0	22	925
7:00 AM	107	2	109	0	2	110	0	112	0	3	6	0	9	230
7:15 AM	119	0	119	0	1	135	0	136	0	3	1	0	4	259
7:30 AM	158	3	161	0	5	110	0	115	0	4	4	0	8	284
7:45 AM	134	1	135	0	3	129	0	132	0	6	7	0	13	280
Hourly Total	518	6	524	0	11	484	0	495	0	16	18	0	34	1053
8:00 AM	88	2	90	0	3	128	0	131	0	3	6	0	9	230
8:15 AM	102	3	105	0	5	109	0	114	0	2	7	0	9	228
8:30 AM	112	2	114	0	2	118	0	120	0	0	6	0	6	240
8:45 AM	92	2	94	0	4	122	0	126	0	2	1	0	3	223
Hourly Total	394	9	403	0	14	477	0	491	0	7	20	0	27	921
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	144	5	149	0	4	134	0	138	0	8	8	0	16	303
3:15 PM	161	2	163	0	5	158	1	163	0	9	4	0	13	339
3:30 PM	184	3	187	0	2	187	0	189	0	6	2	0	8	384
3:45 PM	111	4	115	0	5	182	2	187	0	6	4	0	10	312
Hourly Total	600	14	614	0	16	661	3	677	0	29	18	0	47	1338
4:00 PM	132	3	135	0	12	169	2	181	0	5	6	0	11	327
4:15 PM	101	0	101	0	8	183	0	191	0	7	2	0	9	301
4:30 PM	127	1	128	0	11	169	1	180	0	5	3	2	8	316
4:45 PM	103	2	105	0	7	191	1	198	0	4	4	0	8	311
Hourly Total	463	6	469	0	38	712	4	750	0	21	15	2	36	1255
5:00 PM	100	1	101	0	6	183	0	189	0	5	8	0	13	303
5:15 PM	100	0	100	0	5	170	0	175	0	5	4	0	9	284
5:30 PM	99	2	101	0	6	180	2	186	0	10	5	0	15	302
5:45 PM	72	2	74	0	6	182	1	188	0	3	3	0	6	268
Hourly Total	371	5	376	0	23	715	3	738	0	23	20	0	43	1157
Grand Total	2717	43	2760	0	115	3565	10	3680	0	103	106	2	209	6649
Approach %	98.4	1.6	-	0.0	3.1	96.9	-	-	0.0	49.3	50.7	-	-	-
Total %	40.9	0.6	41.5	0.0	1.7	53.6	-	55.3	0.0	1.5	1.6	-	3.1	-
Lights	2274	38	2312	0	82	3095	-	3177	0	98	86	-	184	5673
% Lights	83.7	88.4	83.8	-	71.3	86.8	-	86.3	-	95.1	81.1	-	88.0	85.3

Buses	56	0	56	0	1	60	-	61	0	0	1	-	1	118
% Buses	2.1	0.0	2.0	-	0.9	1.7	-	1.7	-	0.0	0.9	-	0.5	1.8
Single-Unit Trucks	177	2	179	0	17	162	-	179	0	3	14	-	17	375
% Single-Unit Trucks	6.5	4.7	6.5	-	14.8	4.5	-	4.9	-	2.9	13.2	-	8.1	5.6
Articulated Trucks	210	3	213	0	13	248	-	261	0	1	5	-	6	480
% Articulated Trucks	7.7	7.0	7.7	-	11.3	7.0	-	7.1	-	1.0	4.7	-	2.9	7.2
Bicycles on Road	0	0	0	0	2	0	-	2	0	1	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	1.7	0.0	-	0.1	-	1.0	0.0	-	0.5	0.0
Pedestrians	-	-	-	-	-	-	10	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Pershing Road with Normal Avenue
 Site Code:
 Start Date: 04/27/2021
 Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pershing Road Eastbound			Pershing Road Westbound					Normal Avenue Northbound					Int. Total
	Thru	Right	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	132	3	135	0	12	169	2	181	0	5	6	0	11	327
4:15 PM	101	0	101	0	8	183	0	191	0	7	2	0	9	301
4:30 PM	127	1	128	0	11	169	1	180	0	5	3	2	8	316
4:45 PM	103	2	105	0	7	191	1	198	0	4	4	0	8	311
Total	463	6	469	0	38	712	4	750	0	21	15	2	36	1255
Approach %	98.7	1.3	-	0.0	5.1	94.9	-	-	0.0	58.3	41.7	-	-	-
Total %	36.9	0.5	37.4	0.0	3.0	56.7	-	59.8	0.0	1.7	1.2	-	2.9	-
PHF	0.877	0.500	0.869	0.000	0.792	0.932	-	0.947	0.000	0.750	0.625	-	0.818	0.959
Lights	430	6	436	0	22	629	-	651	0	21	15	-	36	1123
% Lights	92.9	100.0	93.0	-	57.9	88.3	-	86.8	-	100.0	100.0	-	100.0	89.5
Buses	11	0	11	0	0	17	-	17	0	0	0	-	0	28
% Buses	2.4	0.0	2.3	-	0.0	2.4	-	2.3	-	0.0	0.0	-	0.0	2.2
Single-Unit Trucks	10	0	10	0	9	26	-	35	0	0	0	-	0	45
% Single-Unit Trucks	2.2	0.0	2.1	-	23.7	3.7	-	4.7	-	0.0	0.0	-	0.0	3.6
Articulated Trucks	12	0	12	0	6	40	-	46	0	0	0	-	0	58
% Articulated Trucks	2.6	0.0	2.6	-	15.8	5.6	-	6.1	-	0.0	0.0	-	0.0	4.6
Bicycles on Road	0	0	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	2.6	0.0	-	0.1	-	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	-	-	4	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Pershing Road with Wells Street
Site Code:
Start Date: 06/21/2022
Page No: 1

Turning Movement Data

Start Time	Pershing Road Eastbound					Pershing Road Westbound					Wells Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
6:00 AM	0	82	0	0	82	0	7	123	2	130	0	2	4	0	6	218
6:15 AM	0	103	2	1	105	0	13	124	0	137	0	0	6	0	6	248
6:30 AM	0	77	0	1	77	0	8	155	0	163	0	2	4	0	6	246
6:45 AM	0	93	1	0	94	0	9	127	0	136	0	1	8	1	9	239
Hourly Total	0	355	3	2	358	0	37	529	2	566	0	5	22	1	27	951
7:00 AM	0	98	0	1	98	0	3	118	0	121	0	1	2	0	3	222
7:15 AM	0	112	1	0	113	0	3	101	1	104	0	0	9	1	9	226
7:30 AM	0	117	3	0	120	0	10	112	0	122	0	2	9	0	11	253
7:45 AM	0	115	1	0	116	0	8	142	0	150	0	2	8	0	10	276
Hourly Total	0	442	5	1	447	0	24	473	1	497	0	5	28	1	33	977
8:00 AM	0	113	5	0	118	0	10	118	2	128	0	1	12	1	13	259
8:15 AM	0	101	7	2	108	0	8	121	3	129	0	3	6	2	9	246
8:30 AM	0	92	3	0	95	0	10	121	3	131	0	4	8	0	12	238
8:45 AM	0	92	0	0	92	0	8	142	6	150	0	3	6	0	9	251
Hourly Total	0	398	15	2	413	0	36	502	14	538	0	11	32	3	43	994
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	133	2	6	135	0	10	172	1	182	0	3	4	0	7	324
3:15 PM	0	102	2	2	104	0	17	181	9	198	0	1	6	7	7	309
3:30 PM	0	170	0	1	170	0	10	185	6	195	0	3	9	4	12	377
3:45 PM	0	128	1	0	129	0	16	188	3	204	0	3	3	1	6	339
Hourly Total	0	533	5	9	538	0	53	726	19	779	0	10	22	12	32	1349
4:00 PM	0	124	4	4	128	0	16	204	3	220	0	1	6	2	7	355
4:15 PM	0	103	1	0	104	0	12	193	1	205	0	5	9	0	14	323
4:30 PM	0	131	1	0	132	0	13	217	5	230	0	0	8	3	8	370
4:45 PM	0	101	6	1	107	0	24	198	4	222	0	2	11	0	13	342
Hourly Total	0	459	12	5	471	0	65	812	13	877	0	8	34	5	42	1390
5:00 PM	0	109	2	6	111	0	9	226	2	235	0	2	4	1	6	352
5:15 PM	0	110	4	5	114	0	7	180	12	187	0	0	9	4	9	310
5:30 PM	0	88	0	3	88	0	13	203	2	216	0	4	8	2	12	316
5:45 PM	0	115	5	2	120	0	8	209	3	217	0	2	6	3	8	345
Hourly Total	0	422	11	16	433	0	37	818	19	855	0	8	27	10	35	1323
Grand Total	0	2609	51	35	2660	0	252	3860	68	4112	0	47	165	32	212	6984
Approach %	0.0	98.1	1.9	-	-	0.0	6.1	93.9	-	-	0.0	22.2	77.8	-	-	-
Total %	0.0	37.4	0.7	-	38.1	0.0	3.6	55.3	-	58.9	0.0	0.7	2.4	-	3.0	-
Lights	0	2188	47	-	2235	0	238	3439	-	3677	0	45	158	-	203	6115
% Lights	-	83.9	92.2	-	84.0	-	94.4	89.1	-	89.4	-	95.7	95.8	-	95.8	87.6

Buses	0	51	0	-	51	0	0	42	-	42	0	0	0	-	0	93
% Buses	-	2.0	0.0	-	1.9	-	0.0	1.1	-	1.0	-	0.0	0.0	-	0.0	1.3
Single-Unit Trucks	0	192	4	-	196	0	10	189	-	199	0	2	7	-	9	404
% Single-Unit Trucks	-	7.4	7.8	-	7.4	-	4.0	4.9	-	4.8	-	4.3	4.2	-	4.2	5.8
Articulated Trucks	0	174	0	-	174	0	3	190	-	193	0	0	0	-	0	367
% Articulated Trucks	-	6.7	0.0	-	6.5	-	1.2	4.9	-	4.7	-	0.0	0.0	-	0.0	5.3
Bicycles on Road	0	4	0	-	4	0	1	0	-	1	0	0	0	-	0	5
% Bicycles on Road	-	0.2	0.0	-	0.2	-	0.4	0.0	-	0.0	-	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	35	-	-	-	-	68	-	-	-	-	32	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Pershing Road with Wells Street
Site Code:
Start Date: 06/21/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Pershing Road Eastbound					Pershing Road Westbound					Wells Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:30 AM	0	117	3	0	120	0	10	112	0	122	0	2	9	0	11	253
7:45 AM	0	115	1	0	116	0	8	142	0	150	0	2	8	0	10	276
8:00 AM	0	113	5	0	118	0	10	118	2	128	0	1	12	1	13	259
8:15 AM	0	101	7	2	108	0	8	121	3	129	0	3	6	2	9	246
Total	0	446	16	2	462	0	36	493	5	529	0	8	35	3	43	1034
Approach %	0.0	96.5	3.5	-	-	0.0	6.8	93.2	-	-	0.0	18.6	81.4	-	-	-
Total %	0.0	43.1	1.5	-	44.7	0.0	3.5	47.7	-	51.2	0.0	0.8	3.4	-	4.2	-
PHF	0.000	0.953	0.571	-	0.963	0.000	0.900	0.868	-	0.882	0.000	0.667	0.729	-	0.827	0.937
Lights	0	337	13	-	350	0	32	423	-	455	0	7	31	-	38	843
% Lights	-	75.6	81.3	-	75.8	-	88.9	85.8	-	86.0	-	87.5	88.6	-	88.4	81.5
Buses	0	12	0	-	12	0	0	8	-	8	0	0	0	-	0	20
% Buses	-	2.7	0.0	-	2.6	-	0.0	1.6	-	1.5	-	0.0	0.0	-	0.0	1.9
Single-Unit Trucks	0	57	3	-	60	0	3	32	-	35	0	1	4	-	5	100
% Single-Unit Trucks	-	12.8	18.8	-	13.0	-	8.3	6.5	-	6.6	-	12.5	11.4	-	11.6	9.7
Articulated Trucks	0	40	0	-	40	0	1	30	-	31	0	0	0	-	0	71
% Articulated Trucks	-	9.0	0.0	-	8.7	-	2.8	6.1	-	5.9	-	0.0	0.0	-	0.0	6.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	2	-	-	-	-	5	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Pershing Road with Wells Street
Site Code:
Start Date: 06/21/2022
Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pershing Road Eastbound					Pershing Road Westbound					Wells Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	124	4	4	128	0	16	204	3	220	0	1	6	2	7	355
4:15 PM	0	103	1	0	104	0	12	193	1	205	0	5	9	0	14	323
4:30 PM	0	131	1	0	132	0	13	217	5	230	0	0	8	3	8	370
4:45 PM	0	101	6	1	107	0	24	198	4	222	0	2	11	0	13	342
Total	0	459	12	5	471	0	65	812	13	877	0	8	34	5	42	1390
Approach %	0.0	97.5	2.5	-	-	0.0	7.4	92.6	-	-	0.0	19.0	81.0	-	-	-
Total %	0.0	33.0	0.9	-	33.9	0.0	4.7	58.4	-	63.1	0.0	0.6	2.4	-	3.0	-
PHF	0.000	0.876	0.500	-	0.892	0.000	0.677	0.935	-	0.953	0.000	0.400	0.773	-	0.750	0.939
Lights	0	432	12	-	444	0	63	738	-	801	0	8	34	-	42	1287
% Lights	-	94.1	100.0	-	94.3	-	96.9	90.9	-	91.3	-	100.0	100.0	-	100.0	92.6
Buses	0	5	0	-	5	0	0	7	-	7	0	0	0	-	0	12
% Buses	-	1.1	0.0	-	1.1	-	0.0	0.9	-	0.8	-	0.0	0.0	-	0.0	0.9
Single-Unit Trucks	0	14	0	-	14	0	1	33	-	34	0	0	0	-	0	48
% Single-Unit Trucks	-	3.1	0.0	-	3.0	-	1.5	4.1	-	3.9	-	0.0	0.0	-	0.0	3.5
Articulated Trucks	0	8	0	-	8	0	1	34	-	35	0	0	0	-	0	43
% Articulated Trucks	-	1.7	0.0	-	1.7	-	1.5	4.2	-	4.0	-	0.0	0.0	-	0.0	3.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	5	-	-	-	-	13	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Princeton Avenue with Pershing
 Road
 Site Code:
 Start Date: 06/21/2022
 Page No: 1

Turning Movement Data

Start Time	Pershing Road Eastbound					Pershing Road Westbound					Princeton Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
6:00 AM	0	74	5	0	79	0	8	109	0	117	0	2	3	0	5	201
6:15 AM	0	93	3	0	96	0	6	123	0	129	0	4	7	1	11	236
6:30 AM	0	91	0	0	91	0	3	143	0	146	0	2	2	1	4	241
6:45 AM	0	86	2	0	88	0	3	145	0	148	0	3	3	1	6	242
Hourly Total	0	344	10	0	354	0	20	520	0	540	0	11	15	3	26	920
7:00 AM	0	93	0	0	93	0	1	105	0	106	0	2	1	3	3	202
7:15 AM	0	115	6	0	121	0	2	112	0	114	0	4	2	0	6	241
7:30 AM	0	109	2	0	111	0	2	105	0	107	0	1	2	0	3	221
7:45 AM	0	109	3	0	112	0	5	137	0	142	0	1	7	0	8	262
Hourly Total	0	426	11	0	437	0	10	459	0	469	0	8	12	3	20	926
8:00 AM	0	124	2	0	126	0	0	125	0	125	0	4	4	0	8	259
8:15 AM	0	99	3	0	102	0	2	120	0	122	0	1	3	0	4	228
8:30 AM	0	80	4	0	84	0	3	118	0	121	0	3	9	0	12	217
8:45 AM	0	96	0	1	96	0	3	135	0	138	0	3	2	0	5	239
Hourly Total	0	399	9	1	408	0	8	498	0	506	0	11	18	0	29	943
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	121	4	0	125	0	2	180	4	182	0	2	3	0	5	312
3:15 PM	0	109	3	0	112	0	1	182	0	183	0	6	2	1	8	303
3:30 PM	0	157	2	0	159	0	1	181	2	182	0	8	1	2	9	350
3:45 PM	0	115	1	0	116	0	4	191	4	195	0	5	5	0	10	321
Hourly Total	0	502	10	0	512	0	8	734	10	742	0	21	11	3	32	1286
4:00 PM	0	124	2	0	126	0	2	209	1	211	0	9	1	0	10	347
4:15 PM	0	116	2	0	118	0	2	198	0	200	0	6	0	0	6	324
4:30 PM	0	123	4	1	127	0	1	210	0	211	0	2	5	1	7	345
4:45 PM	0	102	5	0	107	0	2	213	2	215	0	7	5	1	12	334
Hourly Total	0	465	13	1	478	0	7	830	3	837	0	24	11	2	35	1350
5:00 PM	0	104	4	0	108	0	1	212	0	213	0	5	2	0	7	328
5:15 PM	0	111	2	1	113	0	2	193	2	195	0	1	0	1	1	309
5:30 PM	0	90	2	7	92	0	1	200	2	201	0	1	2	5	3	296
5:45 PM	0	120	4	2	124	0	0	215	4	215	0	2	2	3	4	343
Hourly Total	0	425	12	10	437	0	4	820	8	824	0	9	6	9	15	1276
Grand Total	0	2561	65	12	2626	0	57	3861	21	3918	0	84	73	20	157	6701
Approach %	0.0	97.5	2.5	-	-	0.0	1.5	98.5	-	-	0.0	53.5	46.5	-	-	-
Total %	0.0	38.2	1.0	-	39.2	0.0	0.9	57.6	-	58.5	0.0	1.3	1.1	-	2.3	-
Lights	0	2142	57	-	2199	0	47	3442	-	3489	0	83	61	-	144	5832
% Lights	-	83.6	87.7	-	83.7	-	82.5	89.1	-	89.1	-	98.8	83.6	-	91.7	87.0

Buses	0	48	2	-	50	0	0	42	-	42	0	0	0	-	0	92
% Buses	-	1.9	3.1	-	1.9	-	0.0	1.1	-	1.1	-	0.0	0.0	-	0.0	1.4
Single-Unit Trucks	0	197	3	-	200	0	1	199	-	200	0	1	5	-	6	406
% Single-Unit Trucks	-	7.7	4.6	-	7.6	-	1.8	5.2	-	5.1	-	1.2	6.8	-	3.8	6.1
Articulated Trucks	0	170	3	-	173	0	9	176	-	185	0	0	7	-	7	365
% Articulated Trucks	-	6.6	4.6	-	6.6	-	15.8	4.6	-	4.7	-	0.0	9.6	-	4.5	5.4
Bicycles on Road	0	4	0	-	4	0	0	2	-	2	0	0	0	-	0	6
% Bicycles on Road	-	0.2	0.0	-	0.2	-	0.0	0.1	-	0.1	-	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	12	-	-	-	-	21	-	-	-	-	20	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Princeton Avenue with Pershing
 Road
 Site Code:
 Start Date: 06/21/2022
 Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pershing Road Eastbound					Pershing Road Westbound					Princeton Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	124	2	0	126	0	2	209	1	211	0	9	1	0	10	347
4:15 PM	0	116	2	0	118	0	2	198	0	200	0	6	0	0	6	324
4:30 PM	0	123	4	1	127	0	1	210	0	211	0	2	5	1	7	345
4:45 PM	0	102	5	0	107	0	2	213	2	215	0	7	5	1	12	334
Total	0	465	13	1	478	0	7	830	3	837	0	24	11	2	35	1350
Approach %	0.0	97.3	2.7	-	-	0.0	0.8	99.2	-	-	0.0	68.6	31.4	-	-	-
Total %	0.0	34.4	1.0	-	35.4	0.0	0.5	61.5	-	62.0	0.0	1.8	0.8	-	2.6	-
PHF	0.000	0.938	0.650	-	0.941	0.000	0.875	0.974	-	0.973	0.000	0.667	0.550	-	0.729	0.973
Lights	0	438	13	-	451	0	7	749	-	756	0	24	11	-	35	1242
% Lights	-	94.2	100.0	-	94.4	-	100.0	90.2	-	90.3	-	100.0	100.0	-	100.0	92.0
Buses	0	4	0	-	4	0	0	8	-	8	0	0	0	-	0	12
% Buses	-	0.9	0.0	-	0.8	-	0.0	1.0	-	1.0	-	0.0	0.0	-	0.0	0.9
Single-Unit Trucks	0	12	0	-	12	0	0	39	-	39	0	0	0	-	0	51
% Single-Unit Trucks	-	2.6	0.0	-	2.5	-	0.0	4.7	-	4.7	-	0.0	0.0	-	0.0	3.8
Articulated Trucks	0	11	0	-	11	0	0	34	-	34	0	0	0	-	0	45
% Articulated Trucks	-	2.4	0.0	-	2.3	-	0.0	4.1	-	4.1	-	0.0	0.0	-	0.0	3.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	3	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Root Street with Normal Avenue
Site Code:
Start Date: 04/27/2021
Page No: 1

Turning Movement Data

Start Time	Root Street Eastbound						Root Street Westbound						Normal Avenue Northbound						Normal Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
6:00 AM	0	2	30	0	2	32	0	0	20	2	0	22	0	1	1	1	0	3	0	2	0	0	0	2	59
6:15 AM	0	1	16	1	0	18	0	0	29	2	0	31	0	3	3	1	0	7	0	1	0	0	0	1	57
6:30 AM	0	2	18	0	0	20	0	0	26	1	0	27	0	3	1	1	0	5	0	0	0	0	0	0	52
6:45 AM	0	1	23	1	1	25	0	1	37	2	0	40	0	3	3	2	0	8	0	1	0	1	0	2	75
Hourly Total	0	6	87	2	3	95	0	1	112	7	0	120	0	10	8	5	0	23	0	4	0	1	0	5	243
7:00 AM	0	3	34	1	1	38	0	0	24	1	0	25	0	1	1	2	0	4	0	1	1	1	0	3	70
7:15 AM	0	0	22	1	0	23	0	0	21	1	1	22	0	4	3	3	1	10	0	3	2	2	0	7	62
7:30 AM	0	1	17	2	0	20	0	2	32	5	0	39	0	3	3	3	1	9	0	0	2	0	0	2	70
7:45 AM	0	3	29	0	1	32	0	5	27	2	1	34	0	3	4	3	1	10	0	2	2	1	1	5	81
Hourly Total	0	7	102	4	2	113	0	7	104	9	2	120	0	11	11	11	3	33	0	6	7	4	1	17	283
8:00 AM	0	3	12	0	0	15	0	1	35	1	1	37	0	3	5	2	0	10	0	2	1	0	0	3	65
8:15 AM	0	2	24	1	0	27	0	0	34	0	0	34	0	4	2	2	3	8	0	1	1	0	0	2	71
8:30 AM	0	1	18	2	0	21	0	0	20	1	1	21	0	3	2	0	1	5	0	1	3	1	0	5	52
8:45 AM	0	1	27	1	1	29	0	1	26	3	1	30	0	4	2	2	3	8	0	2	0	2	1	4	71
Hourly Total	0	7	81	4	1	92	0	2	115	5	3	122	0	14	11	6	7	31	0	6	5	3	1	14	259
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	2	45	3	0	50	0	0	22	0	0	22	0	5	9	2	2	16	0	2	2	2	0	6	94
3:15 PM	0	2	40	6	1	48	0	3	36	5	0	44	0	5	6	1	0	12	0	0	3	1	0	4	108
3:30 PM	0	3	50	6	1	59	0	5	23	1	1	29	0	3	3	2	0	8	0	0	4	1	0	5	101
3:45 PM	1	2	33	7	0	43	0	0	24	4	2	28	0	3	4	1	0	8	0	1	4	1	0	6	85
Hourly Total	1	9	168	22	2	200	0	8	105	10	3	123	0	16	22	6	2	44	0	3	13	5	0	21	388
4:00 PM	0	1	33	4	2	38	0	1	57	2	0	60	0	2	3	0	2	5	0	3	5	4	0	12	115
4:15 PM	0	3	30	4	0	37	0	1	31	2	0	34	0	5	4	0	0	9	0	4	1	7	0	12	92
4:30 PM	0	1	34	10	0	45	1	2	35	1	0	39	0	4	9	1	0	14	0	2	5	2	1	9	107
4:45 PM	0	2	25	4	2	31	0	4	17	1	1	22	0	10	6	0	1	16	0	1	5	4	0	10	79
Hourly Total	0	7	122	22	4	151	1	8	140	6	1	155	0	21	22	1	3	44	0	10	16	17	1	43	393
5:00 PM	0	4	30	6	2	40	0	2	34	4	0	40	0	5	6	0	6	11	0	6	4	3	0	13	104
5:15 PM	0	2	31	3	1	36	0	3	28	2	0	33	0	0	5	0	3	5	0	3	1	3	0	7	81
5:30 PM	0	2	23	3	0	28	0	4	24	0	0	28	0	5	9	0	4	14	0	1	4	1	0	6	76
5:45 PM	0	2	31	3	2	36	0	2	30	2	0	34	0	3	6	1	2	10	0	0	5	2	0	7	87
Hourly Total	0	10	115	15	5	140	0	11	116	8	0	135	0	13	26	1	15	40	0	10	14	9	0	33	348
Grand Total	1	46	675	69	17	791	1	37	692	45	9	775	0	85	100	30	30	215	0	39	55	39	3	133	1914
Approach %	0.1	5.8	85.3	8.7	-	-	0.1	4.8	89.3	5.8	-	-	0.0	39.5	46.5	14.0	-	-	0.0	29.3	41.4	29.3	-	-	-
Total %	0.1	2.4	35.3	3.6	-	41.3	0.1	1.9	36.2	2.4	-	40.5	0.0	4.4	5.2	1.6	-	11.2	0.0	2.0	2.9	2.0	-	6.9	-
Lights	1	41	588	65	-	695	1	36	607	40	-	684	0	83	91	28	-	202	0	32	50	32	-	114	1695

% Lights	100.0	89.1	87.1	94.2	-	87.9	100.0	97.3	87.7	88.9	-	88.3	-	97.6	91.0	93.3	-	94.0	-	82.1	90.9	82.1	-	85.7	88.6
Buses	0	0	55	0	-	55	0	0	39	2	-	41	0	0	1	1	-	2	0	0	0	0	-	0	98
% Buses	0.0	0.0	8.1	0.0	-	7.0	0.0	0.0	5.6	4.4	-	5.3	-	0.0	1.0	3.3	-	0.9	-	0.0	0.0	0.0	-	0.0	5.1
Single-Unit Trucks	0	1	27	1	-	29	0	0	31	0	-	31	0	1	3	0	-	4	0	3	0	2	-	5	69
% Single-Unit Trucks	0.0	2.2	4.0	1.4	-	3.7	0.0	0.0	4.5	0.0	-	4.0	-	1.2	3.0	0.0	-	1.9	-	7.7	0.0	5.1	-	3.8	3.6
Articulated Trucks	0	2	3	0	-	5	0	0	10	2	-	12	0	1	3	0	-	4	0	4	2	4	-	10	31
% Articulated Trucks	0.0	4.3	0.4	0.0	-	0.6	0.0	0.0	1.4	4.4	-	1.5	-	1.2	3.0	0.0	-	1.9	-	10.3	3.6	10.3	-	7.5	1.6
Bicycles on Road	0	2	2	3	-	7	0	1	5	1	-	7	0	0	2	1	-	3	0	0	3	1	-	4	21
% Bicycles on Road	0.0	4.3	0.3	4.3	-	0.9	0.0	2.7	0.7	2.2	-	0.9	-	0.0	2.0	3.3	-	1.4	-	0.0	5.5	2.6	-	3.0	1.1
Pedestrians	-	-	-	-	17	-	-	-	-	9	-	-	-	-	-	-	30	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Root Street with Normal Avenue
Site Code:
Start Date: 04/27/2021
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Root Street Eastbound						Root Street Westbound						Normal Avenue Northbound						Normal Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	1	17	2	0	20	0	2	32	5	0	39	0	3	3	3	1	9	0	0	2	0	0	2	70
7:45 AM	0	3	29	0	1	32	0	5	27	2	1	34	0	3	4	3	1	10	0	2	2	1	1	5	81
8:00 AM	0	3	12	0	0	15	0	1	35	1	1	37	0	3	5	2	0	10	0	2	1	0	0	3	65
8:15 AM	0	2	24	1	0	27	0	0	34	0	0	34	0	4	2	2	3	8	0	1	1	0	0	2	71
Total	0	9	82	3	1	94	0	8	128	8	2	144	0	13	14	10	5	37	0	5	6	1	1	12	287
Approach %	0.0	9.6	87.2	3.2	-	-	0.0	5.6	88.9	5.6	-	-	0.0	35.1	37.8	27.0	-	-	0.0	41.7	50.0	8.3	-	-	-
Total %	0.0	3.1	28.6	1.0	-	32.8	0.0	2.8	44.6	2.8	-	50.2	0.0	4.5	4.9	3.5	-	12.9	0.0	1.7	2.1	0.3	-	4.2	-
PHF	0.000	0.750	0.707	0.375	-	0.734	0.000	0.400	0.914	0.400	-	0.923	0.000	0.813	0.700	0.833	-	0.925	0.000	0.625	0.750	0.250	-	0.600	0.886
Lights	0	7	58	3	-	68	0	8	115	8	-	131	0	13	13	9	-	35	0	4	5	0	-	9	243
% Lights	-	77.8	70.7	100.0	-	72.3	-	100.0	89.8	100.0	-	91.0	-	100.0	92.9	90.0	-	94.6	-	80.0	83.3	0.0	-	75.0	84.7
Buses	0	0	14	0	-	14	0	0	5	0	-	5	0	0	0	1	-	1	0	0	0	0	-	0	20
% Buses	-	0.0	17.1	0.0	-	14.9	-	0.0	3.9	0.0	-	3.5	-	0.0	0.0	10.0	-	2.7	-	0.0	0.0	0.0	-	0.0	7.0
Single-Unit Trucks	0	0	9	0	-	9	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	14
% Single-Unit Trucks	-	0.0	11.0	0.0	-	9.6	-	0.0	3.9	0.0	-	3.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	4.9
Articulated Trucks	0	2	0	0	-	2	0	0	2	0	-	2	0	0	1	0	-	1	0	1	1	1	-	3	8
% Articulated Trucks	-	22.2	0.0	0.0	-	2.1	-	0.0	1.6	0.0	-	1.4	-	0.0	7.1	0.0	-	2.7	-	20.0	16.7	100.0	-	25.0	2.8
Bicycles on Road	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	0.0	1.2	0.0	-	1.1	-	0.0	0.8	0.0	-	0.7	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.7
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Root Street with Normal Avenue
Site Code:
Start Date: 04/27/2021
Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Root Street Eastbound						Root Street Westbound						Normal Avenue Northbound						Normal Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:00 PM	0	1	33	4	2	38	0	1	57	2	0	60	0	2	3	0	2	5	0	3	5	4	0	12	115
4:15 PM	0	3	30	4	0	37	0	1	31	2	0	34	0	5	4	0	0	9	0	4	1	7	0	12	92
4:30 PM	0	1	34	10	0	45	1	2	35	1	0	39	0	4	9	1	0	14	0	2	5	2	1	9	107
4:45 PM	0	2	25	4	2	31	0	4	17	1	1	22	0	10	6	0	1	16	0	1	5	4	0	10	79
Total	0	7	122	22	4	151	1	8	140	6	1	155	0	21	22	1	3	44	0	10	16	17	1	43	393
Approach %	0.0	4.6	80.8	14.6	-	-	0.6	5.2	90.3	3.9	-	-	0.0	47.7	50.0	2.3	-	-	0.0	23.3	37.2	39.5	-	-	-
Total %	0.0	1.8	31.0	5.6	-	38.4	0.3	2.0	35.6	1.5	-	39.4	0.0	5.3	5.6	0.3	-	11.2	0.0	2.5	4.1	4.3	-	10.9	-
PHF	0.000	0.583	0.897	0.550	-	0.839	0.250	0.500	0.614	0.750	-	0.646	0.000	0.525	0.611	0.250	-	0.688	0.000	0.625	0.800	0.607	-	0.896	0.854
Lights	0	6	117	20	-	143	1	7	121	6	-	135	0	21	20	1	-	42	0	8	12	14	-	34	354
% Lights	-	85.7	95.9	90.9	-	94.7	100.0	87.5	86.4	100.0	-	87.1	-	100.0	90.9	100.0	-	95.5	-	80.0	75.0	82.4	-	79.1	90.1
Buses	0	0	4	0	-	4	0	0	10	0	-	10	0	0	0	0	-	0	0	0	0	0	-	0	14
% Buses	-	0.0	3.3	0.0	-	2.6	0.0	0.0	7.1	0.0	-	6.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	3.6
Single-Unit Trucks	0	0	0	1	-	1	0	0	5	0	-	5	0	0	1	0	-	1	0	0	0	1	-	1	8
% Single-Unit Trucks	-	0.0	0.0	4.5	-	0.7	0.0	0.0	3.6	0.0	-	3.2	-	0.0	4.5	0.0	-	2.3	-	0.0	0.0	5.9	-	2.3	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	0	2	1	1	-	4	6
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.4	0.0	-	1.3	-	0.0	0.0	0.0	-	0.0	-	20.0	6.3	5.9	-	9.3	1.5
Bicycles on Road	0	1	1	1	-	3	0	1	2	0	-	3	0	0	1	0	-	1	0	0	3	1	-	4	11
% Bicycles on Road	-	14.3	0.8	4.5	-	2.0	0.0	12.5	1.4	0.0	-	1.9	-	0.0	4.5	0.0	-	2.3	-	0.0	18.8	5.9	-	9.3	2.8
Pedestrians	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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Count Name: Root Street with Princeton Road
 Site Code:
 Start Date: 06/21/2022
 Page No: 1

Turning Movement Data

Start Time	Eastbound St. Eastbound						Westbound St. Westbound						Northbound St. Northbound						Southbound St. Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
6:00 AM	0	3	33	2	0	38	0	0	31	2	0	33	0	2	1	0	0	3	0	0	1	0	0	1	75
6:15 AM	0	3	20	2	1	25	0	0	36	1	0	37	0	2	2	1	0	5	0	2	0	0	0	2	69
6:30 AM	0	1	22	1	1	24	0	1	28	4	1	33	0	6	0	1	1	7	0	0	0	1	0	1	65
6:45 AM	0	1	33	0	0	34	0	0	27	1	0	28	0	5	1	2	0	8	0	1	0	0	0	1	71
Hourly Total	0	8	108	5	2	121	0	1	122	8	1	131	0	15	4	4	1	23	0	3	1	1	0	5	280
7:00 AM	0	2	17	3	0	22	0	1	27	0	0	28	0	1	0	1	0	2	0	1	0	0	0	1	53
7:15 AM	0	0	22	4	0	26	1	0	17	0	0	18	0	0	2	2	0	4	0	1	1	0	0	2	50
7:30 AM	0	2	23	0	0	25	0	1	20	2	0	23	0	4	1	1	0	6	0	1	0	1	0	2	56
7:45 AM	0	1	29	2	0	32	0	2	30	2	1	34	0	4	2	1	0	7	0	1	0	2	0	3	76
Hourly Total	0	5	91	9	0	105	1	4	94	4	1	103	0	9	5	5	0	19	0	4	1	3	0	8	235
8:00 AM	0	1	15	2	0	18	0	1	21	1	0	23	0	3	1	2	0	6	0	2	0	1	0	3	50
8:15 AM	0	1	28	1	0	30	0	2	33	1	0	36	0	4	0	2	0	6	0	0	1	1	0	2	74
8:30 AM	0	3	20	1	0	24	0	1	23	0	0	24	0	4	0	1	0	5	0	1	0	0	0	1	54
8:45 AM	0	0	17	3	0	20	0	2	30	0	0	32	0	1	1	1	0	3	0	1	0	0	0	1	56
Hourly Total	0	5	80	7	0	92	0	6	107	2	0	115	0	12	2	6	0	20	0	4	1	2	0	7	234
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	0	41	3	0	44	0	4	30	2	0	36	0	4	0	2	0	6	0	1	0	2	1	3	89
3:15 PM	0	1	26	5	0	32	0	5	46	2	1	53	0	3	2	2	0	7	0	4	0	2	0	6	98
3:30 PM	0	0	32	4	0	36	0	4	35	1	1	40	0	3	1	3	1	7	0	4	0	1	0	5	88
3:45 PM	0	1	24	2	0	27	1	3	34	0	2	38	0	4	4	6	2	14	0	4	1	1	0	6	85
Hourly Total	0	2	123	14	0	139	1	16	145	5	4	167	0	14	7	13	3	34	0	13	1	6	1	20	360
4:00 PM	0	1	32	4	0	37	0	6	49	2	7	57	0	5	0	5	0	10	0	0	1	2	0	3	107
4:15 PM	0	1	31	2	0	34	0	5	42	3	3	50	0	5	2	5	1	12	0	2	1	0	0	3	99
4:30 PM	0	2	34	4	0	40	0	2	40	5	2	47	0	2	0	0	1	2	0	0	0	1	0	1	90
4:45 PM	0	0	24	5	0	29	0	2	41	3	1	46	0	2	0	1	0	3	0	3	0	1	2	4	82
Hourly Total	0	4	121	15	0	140	0	15	172	13	13	200	0	14	2	11	2	27	0	5	2	4	2	11	378
5:00 PM	0	1	42	4	0	47	0	5	39	1	1	45	0	3	2	2	1	7	0	3	0	1	0	4	103
5:15 PM	0	0	22	3	0	25	1	3	34	0	1	38	0	3	0	3	0	6	0	1	0	1	1	2	71
5:30 PM	0	0	23	4	0	27	0	3	29	1	0	33	0	3	2	0	0	5	0	0	0	0	0	0	65
5:45 PM	0	1	14	2	0	17	0	3	26	1	1	30	0	3	1	5	0	9	0	1	0	1	0	2	58
Hourly Total	0	2	101	13	0	116	1	14	128	3	3	146	0	12	5	10	1	27	0	5	0	3	1	8	297
Grand Total	0	26	624	63	2	713	3	56	768	35	22	862	0	76	25	49	7	150	0	34	6	19	4	59	1784
Approach %	0.0	3.6	87.5	8.8	-	-	0.3	6.5	89.1	4.1	-	-	0.0	50.7	16.7	32.7	-	-	0.0	57.6	10.2	32.2	-	-	-
Total %	0.0	1.5	35.0	3.5	-	40.0	0.2	3.1	43.0	2.0	-	48.3	0.0	4.3	1.4	2.7	-	8.4	0.0	1.9	0.3	1.1	-	3.3	-
Lights	0	22	531	43	-	596	3	52	674	28	-	757	0	54	24	46	-	124	0	24	6	18	-	48	1525

% Lights	-	84.6	85.1	68.3	-	83.6	100.0	92.9	87.8	80.0	-	87.8	-	71.1	96.0	93.9	-	82.7	-	70.6	100.0	94.7	-	81.4	85.5
Buses	0	0	38	18	-	56	0	1	25	0	-	26	0	20	0	0	-	20	0	0	0	0	-	0	102
% Buses	-	0.0	6.1	28.6	-	7.9	0.0	1.8	3.3	0.0	-	3.0	-	26.3	0.0	0.0	-	13.3	-	0.0	0.0	0.0	-	0.0	5.7
Single-Unit Trucks	0	2	32	1	-	35	0	0	39	2	-	41	0	1	0	1	-	2	0	2	0	1	-	3	81
% Single-Unit Trucks	-	7.7	5.1	1.6	-	4.9	0.0	0.0	5.1	5.7	-	4.8	-	1.3	0.0	2.0	-	1.3	-	5.9	0.0	5.3	-	5.1	4.5
Articulated Trucks	0	2	17	0	-	19	0	0	25	4	-	29	0	0	1	0	-	1	0	8	0	0	-	8	57
% Articulated Trucks	-	7.7	2.7	0.0	-	2.7	0.0	0.0	3.3	11.4	-	3.4	-	0.0	4.0	0.0	-	0.7	-	23.5	0.0	0.0	-	13.6	3.2
Bicycles on Road	0	0	6	1	-	7	0	3	5	1	-	9	0	1	0	2	-	3	0	0	0	0	-	0	19
% Bicycles on Road	-	0.0	1.0	1.6	-	1.0	0.0	5.4	0.7	2.9	-	1.0	-	1.3	0.0	4.1	-	2.0	-	0.0	0.0	0.0	-	0.0	1.1
Pedestrians	-	-	-	-	2	-	-	-	-	-	22	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Root Street with Princeton Road
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Start Date: 06/21/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Eastbound St. Eastbound						Westbound St. Westbound						Northbound St. Northbound						Southbound St. Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	2	23	0	0	25	0	1	20	2	0	23	0	4	1	1	0	6	0	1	0	1	0	2	56
7:45 AM	0	1	29	2	0	32	0	2	30	2	1	34	0	4	2	1	0	7	0	1	0	2	0	3	76
8:00 AM	0	1	15	2	0	18	0	1	21	1	0	23	0	3	1	2	0	6	0	2	0	1	0	3	50
8:15 AM	0	1	28	1	0	30	0	2	33	1	0	36	0	4	0	2	0	6	0	0	1	1	0	2	74
Total	0	5	95	5	0	105	0	6	104	6	1	116	0	15	4	6	0	25	0	4	1	5	0	10	256
Approach %	0.0	4.8	90.5	4.8	-	-	0.0	5.2	89.7	5.2	-	-	0.0	60.0	16.0	24.0	-	-	0.0	40.0	10.0	50.0	-	-	-
Total %	0.0	2.0	37.1	2.0	-	41.0	0.0	2.3	40.6	2.3	-	45.3	0.0	5.9	1.6	2.3	-	9.8	0.0	1.6	0.4	2.0	-	3.9	-
PHF	0.000	0.625	0.819	0.625	-	0.820	0.000	0.750	0.788	0.750	-	0.806	0.000	0.938	0.500	0.750	-	0.893	0.000	0.500	0.250	0.625	-	0.833	0.842
Lights	0	4	64	3	-	71	0	5	98	1	-	104	0	13	4	6	-	23	0	0	1	4	-	5	203
% Lights	-	80.0	67.4	60.0	-	67.6	-	83.3	94.2	16.7	-	89.7	-	86.7	100.0	100.0	-	92.0	-	0.0	100.0	80.0	-	50.0	79.3
Buses	0	0	14	2	-	16	0	1	1	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	20
% Buses	-	0.0	14.7	40.0	-	15.2	-	16.7	1.0	0.0	-	1.7	-	13.3	0.0	0.0	-	8.0	-	0.0	0.0	0.0	-	0.0	7.8
Single-Unit Trucks	0	1	13	0	-	14	0	0	2	1	-	3	0	0	0	0	-	0	0	0	0	1	-	1	18
% Single-Unit Trucks	-	20.0	13.7	0.0	-	13.3	-	0.0	1.9	16.7	-	2.6	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	20.0	-	10.0	7.0
Articulated Trucks	0	0	4	0	-	4	0	0	3	4	-	7	0	0	0	0	-	0	0	4	0	0	-	4	15
% Articulated Trucks	-	0.0	4.2	0.0	-	3.8	-	0.0	2.9	66.7	-	6.0	-	0.0	0.0	0.0	-	0.0	-	100.0	0.0	0.0	-	40.0	5.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Count Name: Root Street with Princeton Road
Site Code:
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Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Eastbound St. Eastbound						Westbound St. Westbound						Northbound St. Northbound						Southbound St. Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:00 PM	0	1	32	4	0	37	0	6	49	2	7	57	0	5	0	5	0	10	0	0	1	2	0	3	107
4:15 PM	0	1	31	2	0	34	0	5	42	3	3	50	0	5	2	5	1	12	0	2	1	0	0	3	99
4:30 PM	0	2	34	4	0	40	0	2	40	5	2	47	0	2	0	0	1	2	0	0	0	1	0	1	90
4:45 PM	0	0	24	5	0	29	0	2	41	3	1	46	0	2	0	1	0	3	0	3	0	1	2	4	82
Total	0	4	121	15	0	140	0	15	172	13	13	200	0	14	2	11	2	27	0	5	2	4	2	11	378
Approach %	0.0	2.9	86.4	10.7	-	-	0.0	7.5	86.0	6.5	-	-	0.0	51.9	7.4	40.7	-	-	0.0	45.5	18.2	36.4	-	-	-
Total %	0.0	1.1	32.0	4.0	-	37.0	0.0	4.0	45.5	3.4	-	52.9	0.0	3.7	0.5	2.9	-	7.1	0.0	1.3	0.5	1.1	-	2.9	-
PHF	0.000	0.500	0.890	0.750	-	0.875	0.000	0.625	0.878	0.650	-	0.877	0.000	0.700	0.250	0.550	-	0.563	0.000	0.417	0.500	0.500	-	0.688	0.883
Lights	0	3	120	11	-	134	0	15	150	13	-	178	0	10	2	11	-	23	0	4	2	4	-	10	345
% Lights	-	75.0	99.2	73.3	-	95.7	-	100.0	87.2	100.0	-	89.0	-	71.4	100.0	100.0	-	85.2	-	80.0	100.0	100.0	-	90.9	91.3
Buses	0	0	1	4	-	5	0	0	7	0	-	7	0	3	0	0	-	3	0	0	0	0	-	0	15
% Buses	-	0.0	0.8	26.7	-	3.6	-	0.0	4.1	0.0	-	3.5	-	21.4	0.0	0.0	-	11.1	-	0.0	0.0	0.0	-	0.0	4.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	6	0	-	6	0	1	0	0	-	1	0	0	0	0	-	0	7
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	3.5	0.0	-	3.0	-	7.1	0.0	0.0	-	3.7	-	0.0	0.0	0.0	-	0.0	1.9
Articulated Trucks	0	1	0	0	-	1	0	0	8	0	-	8	0	0	0	0	-	0	0	1	0	0	-	1	10
% Articulated Trucks	-	25.0	0.0	0.0	-	0.7	-	0.0	4.7	0.0	-	4.0	-	0.0	0.0	0.0	-	0.0	-	20.0	0.0	0.0	-	9.1	2.6
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.6	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	-	0	-	-	-	-	-	13	-	-	-	-	-	2	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Root Street with Well Street
 Site Code:
 Start Date: 06/21/2022
 Page No: 1

Turning Movement Data

Start Time	Root Street Eastbound						Root Street Westbound						Wells Street Northbound						Welll Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
6:00 AM	0	0	34	0	0	34	1	3	35	0	0	39	0	1	0	1	0	2	0	1	0	1	0	2	77
6:15 AM	0	0	22	0	0	22	0	0	36	0	0	36	0	1	0	1	0	2	0	0	0	0	1	0	60
6:30 AM	0	0	23	0	1	23	0	1	28	0	1	29	0	0	2	1	1	3	0	2	0	2	1	4	59
6:45 AM	0	0	35	0	0	35	0	0	29	0	0	29	0	0	0	1	0	1	0	0	0	0	0	0	65
Hourly Total	0	0	114	0	1	114	1	4	128	0	1	133	0	2	2	4	1	8	0	3	0	3	2	6	261
7:00 AM	0	0	19	0	1	19	0	0	24	1	1	25	0	3	1	1	1	5	0	1	0	1	1	2	51
7:15 AM	0	1	26	1	0	28	0	0	17	2	0	19	0	0	0	3	0	3	0	2	0	0	0	2	52
7:30 AM	0	1	22	0	0	23	0	0	25	1	0	26	0	0	0	0	0	0	0	1	0	0	0	1	50
7:45 AM	0	0	31	0	0	31	1	0	32	0	0	33	0	0	1	0	0	1	0	0	0	0	0	0	65
Hourly Total	0	2	98	1	1	101	1	0	98	4	1	103	0	3	2	4	1	9	0	4	0	1	1	5	218
8:00 AM	0	2	19	0	0	21	0	1	25	1	0	27	0	2	0	0	0	2	0	2	0	0	0	2	52
8:15 AM	0	3	26	1	0	30	0	0	33	1	0	34	0	0	0	2	0	2	0	3	0	1	1	4	70
8:30 AM	0	0	22	0	0	22	0	0	24	0	0	24	0	1	0	0	0	1	0	4	0	1	0	5	52
8:45 AM	0	0	21	0	2	21	0	0	28	2	0	30	0	3	0	1	0	4	0	3	0	0	0	3	58
Hourly Total	0	5	88	1	2	94	0	1	110	4	0	115	0	6	0	3	0	9	0	12	0	2	1	14	232
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	2	46	0	4	49	0	0	42	3	0	45	0	1	0	0	0	1	0	4	1	2	0	7	102
3:15 PM	0	0	30	1	1	31	0	2	44	2	3	48	0	5	1	3	0	9	0	1	0	3	6	4	92
3:30 PM	0	1	36	2	3	39	1	0	36	1	0	38	0	1	0	5	0	6	0	1	0	3	1	4	87
3:45 PM	1	1	35	2	6	39	0	1	36	1	0	38	0	2	1	1	0	4	0	0	0	1	1	1	82
Hourly Total	2	4	147	5	14	158	1	3	158	7	3	169	0	9	2	9	0	20	0	6	1	9	8	16	363
4:00 PM	1	1	36	2	0	40	0	1	57	1	0	59	0	2	0	2	0	4	0	1	1	1	4	3	106
4:15 PM	1	1	42	0	1	44	0	2	47	1	0	50	0	3	0	5	0	8	0	3	1	3	0	7	109
4:30 PM	0	0	36	1	1	37	0	1	43	1	0	45	0	2	0	2	0	4	0	1	0	2	5	3	89
4:45 PM	0	0	30	0	1	30	0	1	44	3	0	48	1	2	1	0	0	4	0	2	0	3	1	5	87
Hourly Total	2	2	144	3	3	151	0	5	191	6	0	202	1	9	1	9	0	20	0	7	2	9	10	18	391
5:00 PM	2	1	46	1	0	50	0	0	42	1	0	43	0	2	2	0	0	4	1	4	2	2	1	9	106
5:15 PM	0	1	28	1	1	30	0	2	38	0	0	40	0	1	0	0	0	1	0	2	0	1	1	3	74
5:30 PM	2	0	24	1	0	27	0	2	35	2	0	39	0	1	1	1	0	3	0	1	0	0	0	1	70
5:45 PM	1	0	21	1	0	23	1	0	31	3	0	35	0	0	0	1	1	1	0	0	0	0	4	0	59
Hourly Total	5	2	119	4	1	130	1	4	146	6	0	157	0	4	3	2	1	9	1	7	2	3	6	13	309
Grand Total	9	15	710	14	22	748	4	17	831	27	5	879	1	33	10	31	3	75	1	39	5	27	28	72	1774
Approach %	1.2	2.0	94.9	1.9	-	-	0.5	1.9	94.5	3.1	-	-	1.3	44.0	13.3	41.3	-	-	1.4	54.2	6.9	37.5	-	-	-
Total %	0.5	0.8	40.0	0.8	-	42.2	0.2	1.0	46.8	1.5	-	49.5	0.1	1.9	0.6	1.7	-	4.2	0.1	2.2	0.3	1.5	-	4.1	-
Lights	9	14	609	12	-	644	4	16	735	20	-	775	1	28	10	30	-	69	1	29	5	21	-	56	1544

% Lights	100.0	93.3	85.8	85.7	-	86.1	100.0	94.1	88.4	74.1	-	88.2	100.0	84.8	100.0	96.8	-	92.0	100.0	74.4	100.0	77.8	-	77.8	87.0
Buses	0	0	36	0	-	36	0	0	24	0	-	24	0	3	0	0	-	3	0	0	0	0	-	0	63
% Buses	0.0	0.0	5.1	0.0	-	4.8	0.0	0.0	2.9	0.0	-	2.7	0.0	9.1	0.0	0.0	-	4.0	0.0	0.0	0.0	0.0	-	0.0	3.6
Single-Unit Trucks	0	0	37	2	-	39	0	1	38	3	-	42	0	1	0	1	-	2	0	6	0	4	-	10	93
% Single-Unit Trucks	0.0	0.0	5.2	14.3	-	5.2	0.0	5.9	4.6	11.1	-	4.8	0.0	3.0	0.0	3.2	-	2.7	0.0	15.4	0.0	14.8	-	13.9	5.2
Articulated Trucks	0	0	22	0	-	22	0	0	29	2	-	31	0	0	0	0	-	0	0	4	0	0	-	4	57
% Articulated Trucks	0.0	0.0	3.1	0.0	-	2.9	0.0	0.0	3.5	7.4	-	3.5	0.0	0.0	0.0	0.0	-	0.0	0.0	10.3	0.0	0.0	-	5.6	3.2
Bicycles on Road	0	1	6	0	-	7	0	0	5	2	-	7	0	1	0	0	-	1	0	0	0	2	-	2	17
% Bicycles on Road	0.0	6.7	0.8	0.0	-	0.9	0.0	0.0	0.6	7.4	-	0.8	0.0	3.0	0.0	0.0	-	1.3	0.0	0.0	0.0	7.4	-	2.8	1.0
Pedestrians	-	-	-	-	22	-	-	-	-	5	-	-	-	-	-	-	3	-	-	-	-	-	28	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Root Street with Well Street
Site Code:
Start Date: 06/21/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Root Street Eastbound						Root Street Westbound						Wells Street Northbound						Welll Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	1	22	0	0	23	0	0	25	1	0	26	0	0	0	0	0	0	0	1	0	0	0	1	50
7:45 AM	0	0	31	0	0	31	1	0	32	0	0	33	0	0	1	0	0	1	0	0	0	0	0	0	65
8:00 AM	0	2	19	0	0	21	0	1	25	1	0	27	0	2	0	0	0	2	0	2	0	0	0	2	52
8:15 AM	0	3	26	1	0	30	0	0	33	1	0	34	0	0	0	2	0	2	0	3	0	1	1	4	70
Total	0	6	98	1	0	105	1	1	115	3	0	120	0	2	1	2	0	5	0	6	0	1	1	7	237
Approach %	0.0	5.7	93.3	1.0	-	-	0.8	0.8	95.8	2.5	-	-	0.0	40.0	20.0	40.0	-	-	0.0	85.7	0.0	14.3	-	-	-
Total %	0.0	2.5	41.4	0.4	-	44.3	0.4	0.4	48.5	1.3	-	50.6	0.0	0.8	0.4	0.8	-	2.1	0.0	2.5	0.0	0.4	-	3.0	-
PHF	0.000	0.500	0.790	0.250	-	0.847	0.250	0.250	0.871	0.750	-	0.882	0.000	0.250	0.250	0.250	-	0.625	0.000	0.500	0.000	0.250	-	0.438	0.846
Lights	0	6	63	1	-	70	1	1	105	2	-	109	0	1	1	2	-	4	0	4	0	1	-	5	188
% Lights	-	100.0	64.3	100.0	-	66.7	100.0	100.0	91.3	66.7	-	90.8	-	50.0	100.0	100.0	-	80.0	-	66.7	-	100.0	-	71.4	79.3
Buses	0	0	12	0	-	12	0	0	1	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	14
% Buses	-	0.0	12.2	0.0	-	11.4	0.0	0.0	0.9	0.0	-	0.8	-	50.0	0.0	0.0	-	20.0	-	0.0	-	0.0	-	0.0	5.9
Single-Unit Trucks	0	0	15	0	-	15	0	0	2	0	-	2	0	0	0	0	-	0	0	2	0	0	-	2	19
% Single-Unit Trucks	-	0.0	15.3	0.0	-	14.3	0.0	0.0	1.7	0.0	-	1.7	-	0.0	0.0	0.0	-	0.0	-	33.3	-	0.0	-	28.6	8.0
Articulated Trucks	0	0	8	0	-	8	0	0	7	1	-	8	0	0	0	0	-	0	0	0	0	0	-	0	16
% Articulated Trucks	-	0.0	8.2	0.0	-	7.6	0.0	0.0	6.1	33.3	-	6.7	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	6.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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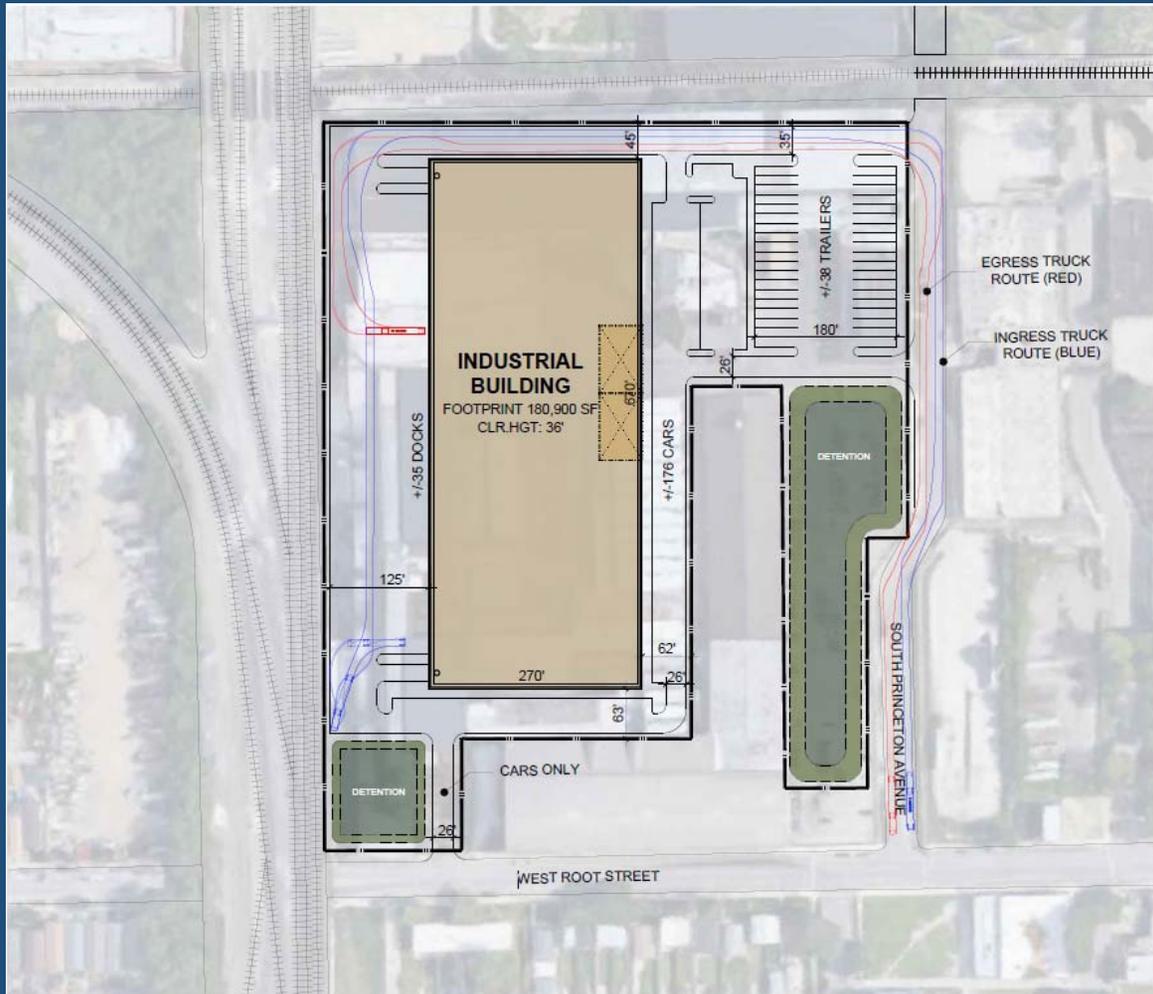
Count Name: Root Street with Well Street
Site Code:
Start Date: 06/21/2022
Page No: 4

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Root Street Eastbound						Root Street Westbound						Wells Street Northbound						Welll Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:00 PM	1	1	36	2	0	40	0	1	57	1	0	59	0	2	0	2	0	4	0	1	1	1	4	3	106
4:15 PM	1	1	42	0	1	44	0	2	47	1	0	50	0	3	0	5	0	8	0	3	1	3	0	7	109
4:30 PM	0	0	36	1	1	37	0	1	43	1	0	45	0	2	0	2	0	4	0	1	0	2	5	3	89
4:45 PM	0	0	30	0	1	30	0	1	44	3	0	48	1	2	1	0	0	4	0	2	0	3	1	5	87
Total	2	2	144	3	3	151	0	5	191	6	0	202	1	9	1	9	0	20	0	7	2	9	10	18	391
Approach %	1.3	1.3	95.4	2.0	-	-	0.0	2.5	94.6	3.0	-	-	5.0	45.0	5.0	45.0	-	-	0.0	38.9	11.1	50.0	-	-	-
Total %	0.5	0.5	36.8	0.8	-	38.6	0.0	1.3	48.8	1.5	-	51.7	0.3	2.3	0.3	2.3	-	5.1	0.0	1.8	0.5	2.3	-	4.6	-
PHF	0.500	0.500	0.857	0.375	-	0.858	0.000	0.625	0.838	0.500	-	0.856	0.250	0.750	0.250	0.450	-	0.625	0.000	0.583	0.500	0.750	-	0.643	0.897
Lights	2	2	142	3	-	149	0	5	170	6	-	181	1	8	1	9	-	19	0	6	2	9	-	17	366
% Lights	100.0	100.0	98.6	100.0	-	98.7	-	100.0	89.0	100.0	-	89.6	100.0	88.9	100.0	100.0	-	95.0	-	85.7	100.0	100.0	-	94.4	93.6
Buses	0	0	1	0	-	1	0	0	7	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	8
% Buses	0.0	0.0	0.7	0.0	-	0.7	-	0.0	3.7	0.0	-	3.5	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	2.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	8	0	-	8	0	0	0	0	-	0	0	1	0	0	-	1	9
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	4.2	0.0	-	4.0	0.0	0.0	0.0	0.0	-	0.0	-	14.3	0.0	0.0	-	5.6	2.3
Articulated Trucks	0	0	1	0	-	1	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.0	0.7	0.0	-	0.7	-	0.0	3.1	0.0	-	3.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	11.1	0.0	0.0	-	5.0	-	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Preliminary Site Plan

Site Plan



ITE Trip Generation Worksheets

General Light Industrial (110)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 37

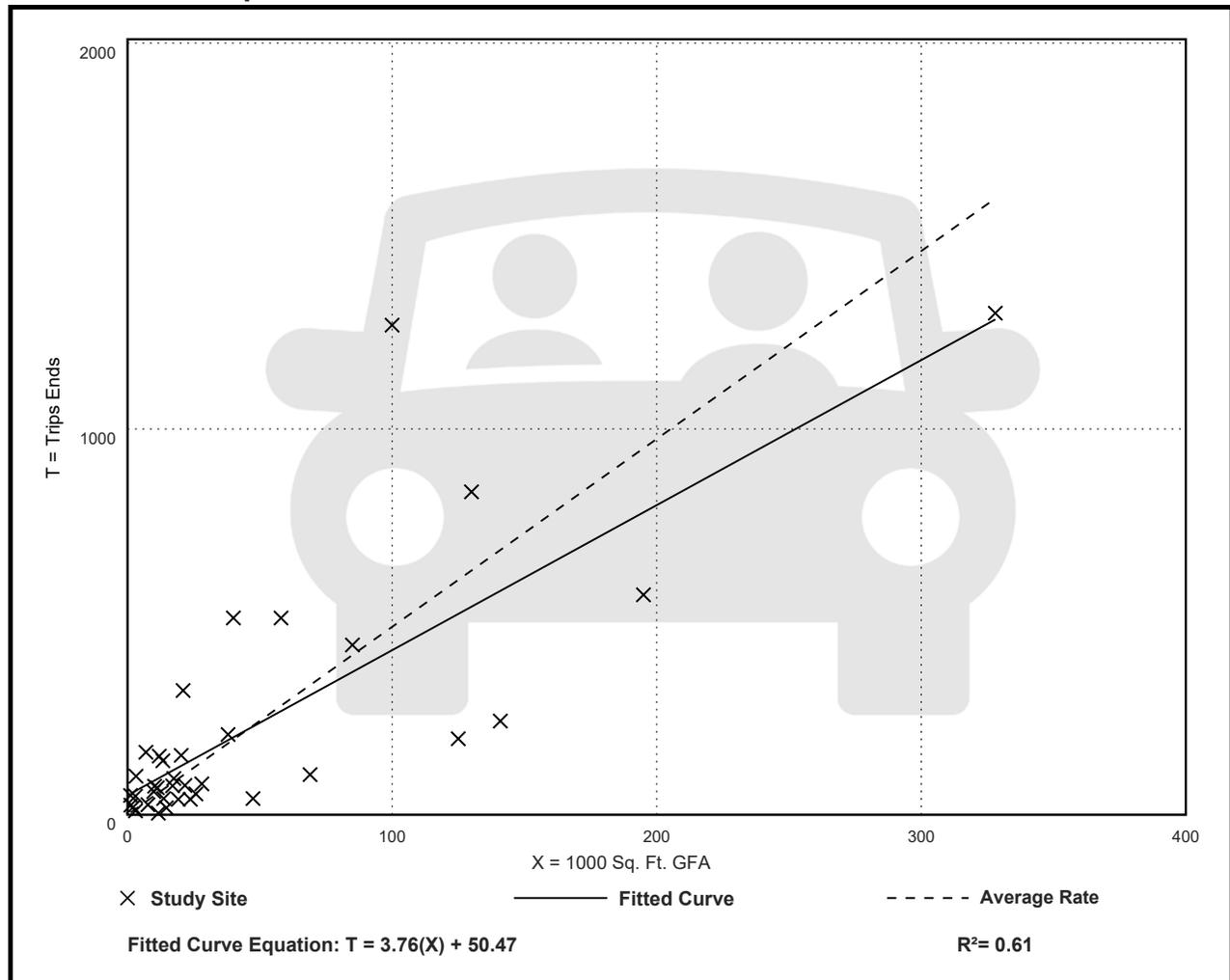
Avg. 1000 Sq. Ft. GFA: 45

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.87	0.34 - 43.86	4.08

Data Plot and Equation



General Light Industrial (110)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 41

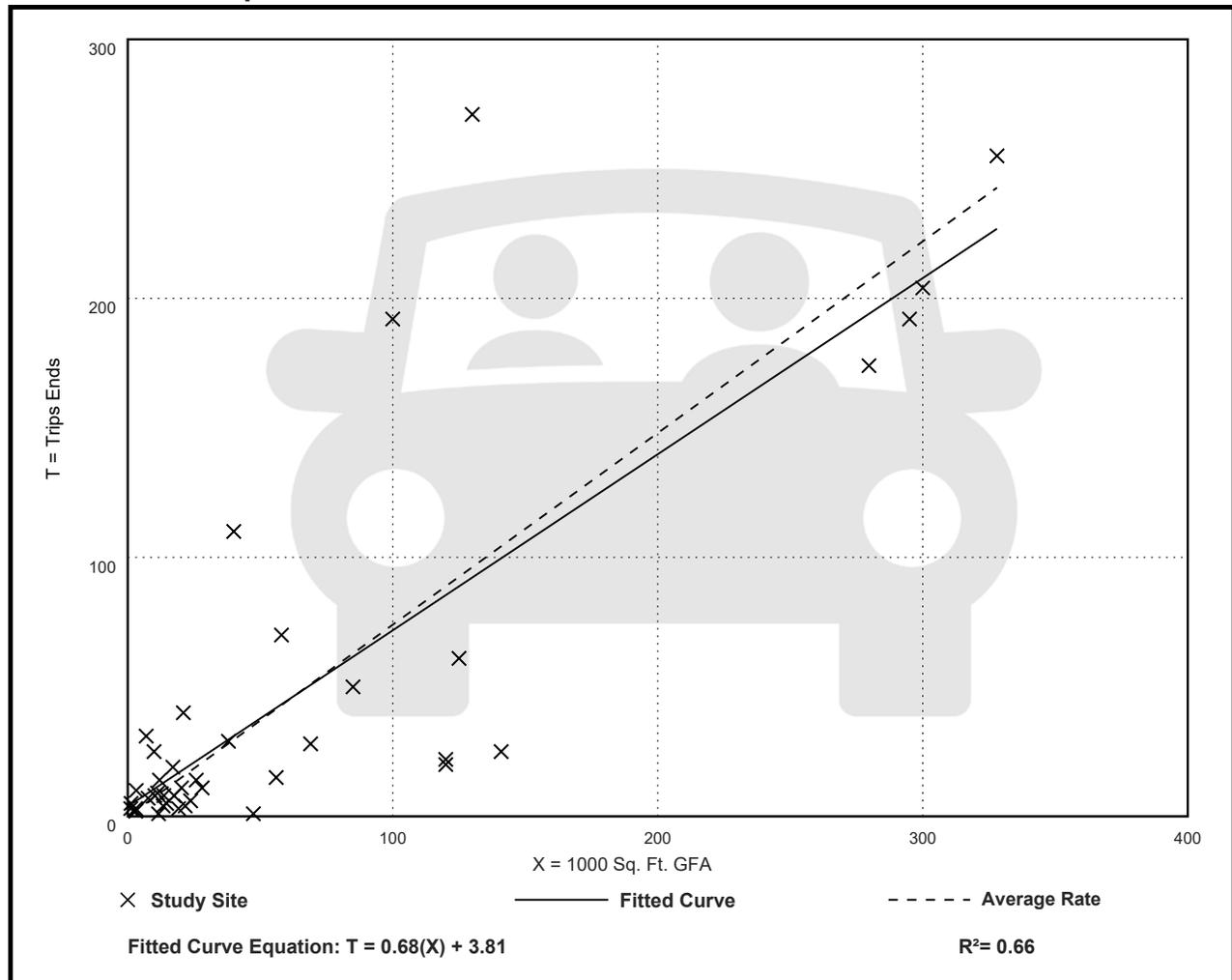
Avg. 1000 Sq. Ft. GFA: 65

Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.02 - 4.46	0.61

Data Plot and Equation



General Light Industrial (110)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 40

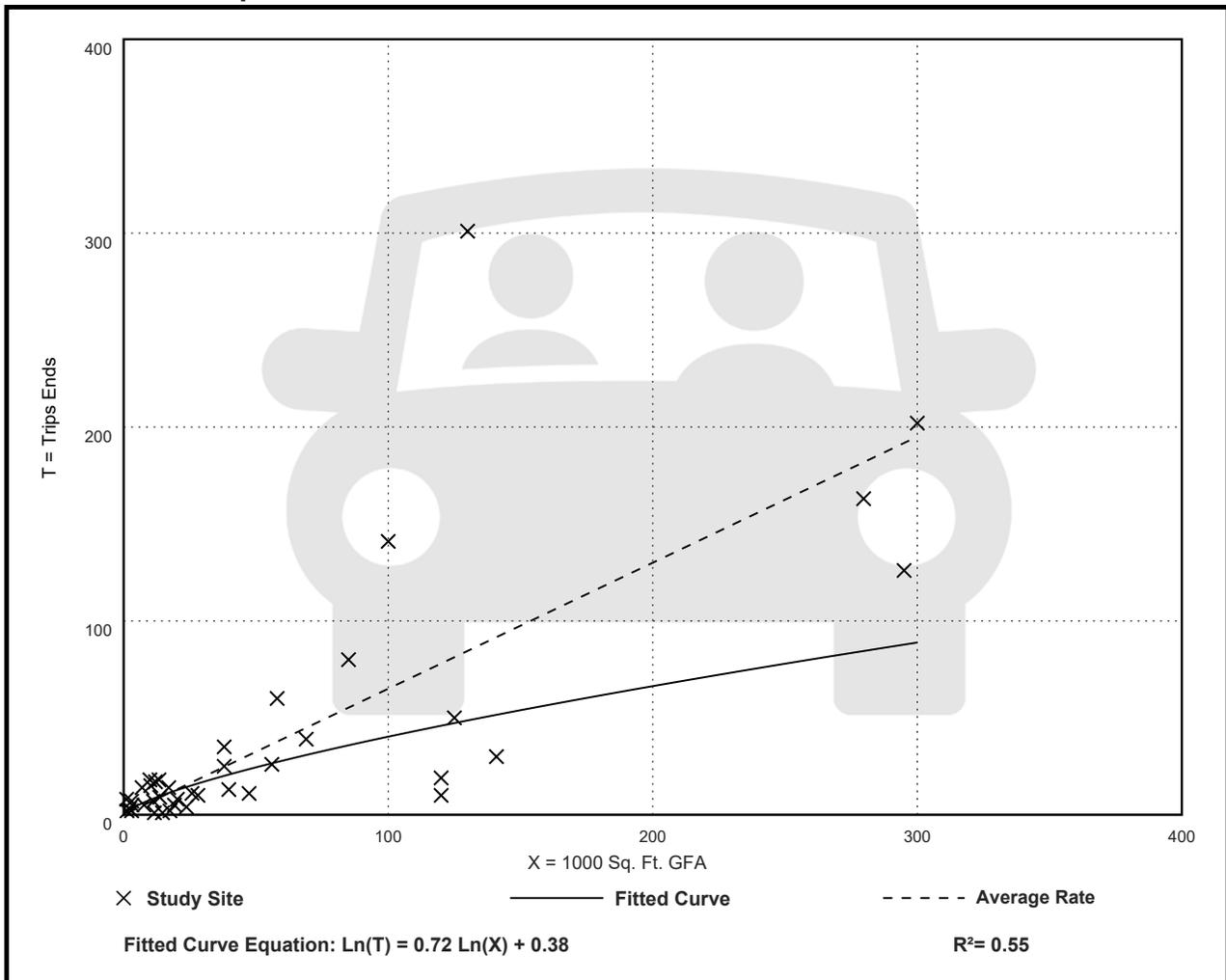
Avg. 1000 Sq. Ft. GFA: 58

Directional Distribution: 14% entering, 86% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.65	0.07 - 7.02	0.56

Data Plot and Equation



Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0
Unsignalized Intersections		
Level of Service	Average Total Delay (SEC/VEH)	
A	0 - 10	
B	> 10 - 15	
C	> 15 - 25	
D	> 25 - 35	
E	> 35 - 50	
F	> 50	

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets
Year 2022 Base Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings
1: Normal Avenue & Pershing Road

07/20/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	627	12	21	628	20	31
Future Volume (vph)	627	12	21	628	20	31
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Lane Width (ft)	10	10	10	10	16	16
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			80		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.918	
Flt Protected			0.950		0.981	
Satd. Flow (prot)	2705	0	1246	3007	1461	0
Flt Permitted			0.331		0.981	
Satd. Flow (perm)	2705	0	434	3007	1461	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4				34	
Link Speed (mph)	30			30	30	
Link Distance (ft)	679			1450	1670	
Travel Time (s)	15.4			33.0	38.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	23%	33%	33%	17%	0%	32%
Bus Blockages (#/hr)	4	4	4	4	0	0
Parking (#/hr)					0	0
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	710	0	23	698	56	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	37.0		37.0	37.0	28.0	
Total Split (s)	37.0		37.0	37.0	28.0	
Total Split (%)	56.9%		56.9%	56.9%	43.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effect Green (s)	33.0		33.0	33.0	24.0	
Actuated g/C Ratio	0.51		0.51	0.51	0.37	

Lanes, Volumes, Timings
 1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.52		0.10	0.46	0.10	
Control Delay	8.5		9.9	11.5	8.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	8.5		9.9	11.5	8.0	
LOS	A		A	B	A	
Approach Delay	8.5			11.4	8.0	
Approach LOS	A			B	A	
Queue Length 50th (ft)	106		4	86	5	
Queue Length 95th (ft)	156		16	125	26	
Internal Link Dist (ft)	599			1370	1590	
Turn Bay Length (ft)			115			
Base Capacity (vph)	1375		220	1526	560	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.52		0.10	0.46	0.10	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	60 (92%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	9.9
Intersection LOS:	A
Intersection Capacity Utilization	28.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Normal Avenue & Pershing Road



HCM 6th TWSC
2: Princeton Avenue & Pershing Road

07/20/2022

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	645	13	12	640	9	21
Future Vol, veh/h	645	13	12	640	9	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	24	23	42	18	0	24
Mvmt Flow	694	14	13	688	10	23

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	708	0	1071
Stage 1	-	-	-	-	701
Stage 2	-	-	-	-	370
Critical Hdwy	-	-	4.94	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.62	-	3.5
Pot Cap-1 Maneuver	-	-	666	-	219
Stage 1	-	-	-	-	459
Stage 2	-	-	-	-	675
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	666	-	215
Mov Cap-2 Maneuver	-	-	-	-	215
Stage 1	-	-	-	-	459
Stage 2	-	-	-	-	662

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	385	-	-	666	-
HCM Lane V/C Ratio	0.084	-	-	0.019	-
HCM Control Delay (s)	15.2	-	-	10.5	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

HCM 6th AWSC
3: Wells Street & Pershing Road

07/20/2022

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Vol, veh/h	645	21	47	642	10	46
Future Vol, veh/h	645	21	47	642	10	46
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	24	19	11	18	10	11
Mvmt Flow	686	22	50	683	11	49
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	26	12.4	10.9
HCM LOS	D	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	18%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	91%	0%	100%	100%
Vol Right, %	82%	0%	9%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	430	236	47	321	321
LT Vol	10	0	0	47	0	0
Through Vol	0	430	215	0	321	321
RT Vol	46	0	21	0	0	0
Lane Flow Rate	60	457	251	50	341	341
Geometry Grp	7	8	8	7	7	7
Degree of Util (X)	0.118	0.823	0.442	0.088	0.565	0.373
Departure Headway (Hd)	7.157	6.48	6.332	6.342	5.958	3.934
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	558	570	566	608	912
Service Time	4.903	4.208	4.06	4.073	3.689	1.665
HCM Lane V/C Ratio	0.12	0.819	0.44	0.088	0.561	0.374
HCM Control Delay	10.9	32.6	14	9.7	16.2	9
HCM Lane LOS	B	D	B	A	C	A
HCM 95th-tile Q	0.4	8.3	2.2	0.3	3.5	1.7

HCM 6th AWSC
4: Normal Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	117	4	7	166	10	17	18	13	7	8	1
Future Vol, veh/h	12	117	4	7	166	10	17	18	13	7	8	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	25	33	0	0	10	0	0	6	8	14	13	100
Mvmt Flow	13	131	4	8	187	11	19	20	15	8	9	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.9	8.6	8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	9%	4%	44%
Vol Thru, %	38%	88%	91%	50%
Vol Right, %	27%	3%	5%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	133	183	16
LT Vol	17	12	7	7
Through Vol	18	117	166	8
RT Vol	13	4	10	1
Lane Flow Rate	54	149	206	18
Geometry Grp	1	1	1	1
Degree of Util (X)	0.069	0.196	0.241	0.025
Departure Headway (Hd)	4.637	4.721	4.217	5.064
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	765	855	708
Service Time	2.658	2.721	2.229	3.088
HCM Lane V/C Ratio	0.07	0.195	0.241	0.025
HCM Control Delay	8	8.9	8.6	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.9	0.1

HCM 6th AWSC
5: Princeton Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	123	7	8	156	8	20	5	8	5	1	7
Future Vol, veh/h	7	123	7	8	156	8	20	5	8	5	1	7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	14	33	0	0	8	88	15	0	0	100	0	14
Mvmt Flow	8	146	8	10	186	10	24	6	10	6	1	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8.5	8.3	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	61%	5%	5%	38%
Vol Thru, %	15%	90%	91%	8%
Vol Right, %	24%	5%	5%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	33	137	172	13
LT Vol	20	7	8	5
Through Vol	5	123	156	1
RT Vol	8	7	8	7
Lane Flow Rate	39	163	205	15
Geometry Grp	1	1	1	1
Degree of Util (X)	0.054	0.203	0.239	0.027
Departure Headway (Hd)	4.973	4.472	4.205	6.234
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	721	806	858	576
Service Time	2.994	2.484	2.216	4.256
HCM Lane V/C Ratio	0.054	0.202	0.239	0.026
HCM Control Delay	8.3	8.6	8.5	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.8	0.9	0.1

HCM 6th TWSC
6: Wells Street & Root Street

07/20/2022

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	127	1	3	168	4	3	1	3	8	0	1
Future Vol, veh/h	8	127	1	3	168	4	3	1	3	8	0	1
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	35	0	0	11	25	33	0	0	38	0	0
Mvmt Flow	9	149	1	4	198	5	4	1	4	9	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	150	0	0	377	380	150	380	378	202
Stage 1	-	-	-	-	-	-	168	168	-	210	210	-
Stage 2	-	-	-	-	-	-	209	212	-	170	168	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.48	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.842	4	3.3
Pot Cap-1 Maneuver	1380	-	-	1444	-	-	528	556	902	518	557	844
Stage 1	-	-	-	-	-	-	766	763	-	717	732	-
Stage 2	-	-	-	-	-	-	727	731	-	754	763	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1379	-	-	1444	-	-	523	550	902	511	551	843
Mov Cap-2 Maneuver	-	-	-	-	-	-	523	550	-	511	551	-
Stage 1	-	-	-	-	-	-	761	758	-	711	729	-
Stage 2	-	-	-	-	-	-	724	728	-	745	758	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			10.7			11.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	643	1379	-	-	1444	-	-	534
HCM Lane V/C Ratio	0.013	0.007	-	-	0.002	-	-	0.02
HCM Control Delay (s)	10.7	7.6	0	-	7.5	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets
Year 2022 Base Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings

1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	509	7	42	898	23	17
Future Volume (vph)	509	7	42	898	23	17
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Lane Width (ft)	10	10	10	10	16	16
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			80		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		0.99	
Frt	0.998				0.942	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	3119	0	1203	3198	1762	0
Flt Permitted			0.425		0.972	
Satd. Flow (perm)	3119	0	537	3198	1762	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3				18	
Link Speed (mph)	30			30	30	
Link Distance (ft)	679			1450	1670	
Travel Time (s)	15.4			33.0	38.0	
Confl. Peds. (#/hr)		2	2			4
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	0%	40%	10%	0%	0%
Bus Blockages (#/hr)	4	4	0	4	0	0
Parking (#/hr)					0	0
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	537	0	44	935	42	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	37.0		37.0	37.0	28.0	
Total Split (s)	37.0		37.0	37.0	28.0	
Total Split (%)	56.9%		56.9%	56.9%	43.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effect Green (s)	33.0		33.0	33.0	24.0	
Actuated g/C Ratio	0.51		0.51	0.51	0.37	

Lanes, Volumes, Timings
 1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.34		0.16	0.58	0.06	
Control Delay	7.0		10.5	12.9	9.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	7.0		10.5	12.9	9.5	
LOS	A		B	B	A	
Approach Delay	7.0			12.8	9.5	
Approach LOS	A			B	A	
Queue Length 50th (ft)	35		9	125	6	
Queue Length 95th (ft)	60		26	177	23	
Internal Link Dist (ft)	599			1370	1590	
Turn Bay Length (ft)			115			
Base Capacity (vph)	1584		272	1623	661	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.34		0.16	0.58	0.06	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	60 (92%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	10.7
Intersection LOS:	B
Intersection Capacity Utilization	45.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Normal Avenue & Pershing Road



HCM 6th TWSC
2: Princeton Avenue & Pershing Road

07/20/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	512	14	8	914	26	12
Future Vol, veh/h	512	14	8	914	26	12
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	12	0	0
Mvmt Flow	528	14	8	942	27	12

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	544	0	1024 273
Stage 1	-	-	-	-	537 -
Stage 2	-	-	-	-	487 -
Critical Hdwy	-	-	4.1	-	6.8 6.9
Critical Hdwy Stg 1	-	-	-	-	5.8 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1035	-	235 731
Stage 1	-	-	-	-	556 -
Stage 2	-	-	-	-	589 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1033	-	233 729
Mov Cap-2 Maneuver	-	-	-	-	233 -
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	584 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	297	-	-	1033	-
HCM Lane V/C Ratio	0.132	-	-	0.008	-
HCM Control Delay (s)	19	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

HCM 6th AWSC
3: Wells Street & Pershing Road

07/20/2022

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Vol, veh/h	511	13	72	913	9	37
Future Vol, veh/h	511	13	72	913	9	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	7	0	3	12	0	0
Mvmt Flow	544	14	77	971	10	39
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	17.8	16.2	10.6
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	20%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	93%	0%	100%	100%
Vol Right, %	80%	0%	7%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	341	183	72	457	457
LT Vol	9	0	0	72	0	0
Through Vol	0	341	170	0	457	457
RT Vol	37	0	13	0	0	0
Lane Flow Rate	49	362	195	77	486	486
Geometry Grp	7	8	8	7	7	7
Degree of Util (X)	0.096	0.655	0.343	0.127	0.756	0.484
Departure Headway (Hd)	7.065	6.507	6.338	5.955	5.605	3.588
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	508	558	570	606	651	986
Service Time	4.799	4.228	4.058	3.655	3.305	1.387
HCM Lane V/C Ratio	0.096	0.649	0.342	0.127	0.747	0.493
HCM Control Delay	10.6	20.8	12.3	9.5	23.6	9.8
HCM Lane LOS	B	C	B	A	C	A
HCM 95th-tile Q	0.3	4.7	1.5	0.4	6.9	2.7

HCM 6th AWSC
4: Normal Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	157	24	10	204	7	23	24	1	11	18	19
Future Vol, veh/h	8	157	24	10	204	7	23	24	1	11	18	19
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	3	4	0	14	0	0	4	0	18	6	11
Mvmt Flow	9	185	28	12	240	8	27	28	1	13	21	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9.5	8.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	48%	4%	5%	23%
Vol Thru, %	50%	83%	92%	38%
Vol Right, %	2%	13%	3%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	189	221	48
LT Vol	23	8	10	11
Through Vol	24	157	204	18
RT Vol	1	24	7	19
Lane Flow Rate	56	222	260	56
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.272	0.319	0.081
Departure Headway (Hd)	5.133	4.406	4.422	5.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	696	816	814	692
Service Time	3.178	2.435	2.45	3.209
HCM Lane V/C Ratio	0.08	0.272	0.319	0.081
HCM Control Delay	8.6	9.1	9.5	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1.1	1.4	0.3

HCM 6th AWSC
5: Princeton Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	148	17	17	202	14	15	2	12	6	2	4
Future Vol, veh/h	4	148	17	17	202	14	15	2	12	6	2	4
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	25	1	24	0	12	0	27	0	0	17	0	0
Mvmt Flow	5	168	19	19	230	16	17	2	14	7	2	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	9.1	8.5	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	52%	2%	7%	50%
Vol Thru, %	7%	88%	87%	17%
Vol Right, %	41%	10%	6%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	169	233	12
LT Vol	15	4	17	6
Through Vol	2	148	202	2
RT Vol	12	17	14	4
Lane Flow Rate	33	192	265	14
Geometry Grp	1	1	1	1
Degree of Util (X)	0.048	0.248	0.31	0.02
Departure Headway (Hd)	5.256	4.658	4.215	5.161
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	682	774	855	694
Service Time	3.281	2.671	2.225	3.187
HCM Lane V/C Ratio	0.048	0.248	0.31	0.02
HCM Control Delay	8.5	9.2	9.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	1	1.3	0.1

HCM 6th TWSC
6: Wells Street & Root Street

07/20/2022

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	159	3	6	212	7	11	1	10	8	2	10
Future Vol, veh/h	4	159	3	6	212	7	11	1	10	8	2	10
Conflicting Peds, #/hr	10	0	0	0	0	10	3	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	11	0	0	0	0	13	0	0
Mvmt Flow	4	177	3	7	236	8	12	1	11	9	2	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	254	0	0	180	0	0	451	455	179	457	452	253
Stage 1	-	-	-	-	-	-	187	187	-	264	264	-
Stage 2	-	-	-	-	-	-	264	268	-	193	188	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.23	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.617	4	3.3
Pot Cap-1 Maneuver	1323	-	-	1408	-	-	522	504	869	496	506	791
Stage 1	-	-	-	-	-	-	819	749	-	718	694	-
Stage 2	-	-	-	-	-	-	746	691	-	784	748	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1310	-	-	1408	-	-	508	494	869	481	496	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	508	494	-	481	496	-
Stage 1	-	-	-	-	-	-	817	747	-	709	683	-
Stage 2	-	-	-	-	-	-	727	680	-	771	746	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			11			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	625	1310	-	-	1408	-	-	598
HCM Lane V/C Ratio	0.039	0.003	-	-	0.005	-	-	0.037
HCM Control Delay (s)	11	7.8	0	-	7.6	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Capacity Analysis Summary Sheets
2028 Projected Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings
1: Normal Avenue & Pershing Road

07/20/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↖	
Traffic Volume (vph)	666	27	34	684	23	33
Future Volume (vph)	666	27	34	684	23	33
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Lane Width (ft)	10	10	10	10	16	16
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			80		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.921	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	2695	0	1256	3033	1467	0
Flt Permitted			0.302		0.980	
Satd. Flow (perm)	2695	0	399	3033	1467	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9				37	
Link Speed (mph)	30			30	30	
Link Distance (ft)	679			1450	1670	
Travel Time (s)	15.4			33.0	38.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	23%	30%	32%	16%	4%	30%
Bus Blockages (#/hr)	4	4	4	4	0	0
Parking (#/hr)					0	0
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	38	760	63	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	37.0		37.0	37.0	28.0	
Total Split (s)	37.0		37.0	37.0	28.0	
Total Split (%)	56.9%		56.9%	56.9%	43.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effect Green (s)	33.0		33.0	33.0	24.0	
Actuated g/C Ratio	0.51		0.51	0.51	0.37	

Lanes, Volumes, Timings
 1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.56		0.19	0.49	0.11	
Control Delay	8.6		11.7	11.9	8.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	8.6		11.7	11.9	8.1	
LOS	A		B	B	A	
Approach Delay	8.6			11.9	8.1	
Approach LOS	A			B	A	
Queue Length 50th (ft)	117		8	96	6	
Queue Length 95th (ft)	171		25	139	28	
Internal Link Dist (ft)	599			1370	1590	
Turn Bay Length (ft)			115			
Base Capacity (vph)	1372		202	1539	565	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.56		0.19	0.49	0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	60 (92%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	10.2
Intersection LOS:	B
Intersection Capacity Utilization	37.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Normal Avenue & Pershing Road



HCM 6th TWSC
2: Princeton Avenue & Pershing Road

07/20/2022

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↘	
Traffic Vol, veh/h	671	28	50	707	11	27
Future Vol, veh/h	671	28	50	707	11	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	23	11	10	17	0	19
Mvmt Flow	722	30	54	760	12	29

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	752	0	1225
Stage 1	-	-	-	-	737
Stage 2	-	-	-	-	488
Critical Hdwy	-	-	4.3	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.3	-	3.5
Pot Cap-1 Maneuver	-	-	803	-	174
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	588
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	803	-	162
Mov Cap-2 Maneuver	-	-	-	-	162
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	549

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	331	-	-	803	-
HCM Lane V/C Ratio	0.123	-	-	0.067	-
HCM Control Delay (s)	17.4	-	-	9.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

HCM 6th AWSC
3: Wells Street & Pershing Road

07/20/2022

Intersection	
Intersection Delay, s/veh	22.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	676	22	48	747	10	47
Future Vol, veh/h	676	22	48	747	10	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	23	18	10	17	10	11
Mvmt Flow	719	23	51	795	11	50
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	32.2	14.7	11.2
HCM LOS	D	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	18%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	91%	0%	100%	100%
Vol Right, %	82%	0%	9%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	451	247	48	374	374
LT Vol	10	0	0	48	0	0
Through Vol	0	451	225	0	374	374
RT Vol	47	0	22	0	0	0
Lane Flow Rate	61	479	263	51	397	397
Geometry Grp	7	8	8	7	7	7
Degree of Util (X)	0.124	0.887	0.476	0.091	0.666	0.444
Departure Headway (Hd)	7.384	6.66	6.512	6.417	6.033	4.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	547	553	558	600	890
Service Time	5.14	4.397	4.249	4.158	3.773	1.765
HCM Lane V/C Ratio	0.126	0.876	0.476	0.091	0.662	0.446
HCM Control Delay	11.2	41.6	15.1	9.8	20	10
HCM Lane LOS	B	E	C	A	C	A
HCM 95th-tile Q	0.4	10.1	2.5	0.3	5	2.3

HCM 6th AWSC
4: Normal Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	145	4	7	188	14	18	19	13	14	8	1
Future Vol, veh/h	15	145	4	7	188	14	18	19	13	14	8	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	33	28	0	0	9	7	0	5	8	7	13	100
Mvmt Flow	17	163	4	8	211	16	20	21	15	16	9	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	9	8.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	9%	3%	61%
Vol Thru, %	38%	88%	90%	35%
Vol Right, %	26%	2%	7%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	164	209	23
LT Vol	18	15	7	14
Through Vol	19	145	188	8
RT Vol	13	4	14	1
Lane Flow Rate	56	184	235	26
Geometry Grp	1	1	1	1
Degree of Util (X)	0.075	0.251	0.28	0.037
Departure Headway (Hd)	4.82	4.912	4.288	5.162
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	743	733	841	694
Service Time	2.849	2.932	2.306	3.194
HCM Lane V/C Ratio	0.075	0.251	0.279	0.037
HCM Control Delay	8.2	9.6	9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	1	1.1	0.1

HCM 6th AWSC
5: Princeton Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	130	7	8	189	21	24	8	8	8	2	7
Future Vol, veh/h	11	130	7	8	189	21	24	8	8	8	2	7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	9	32	0	0	7	43	13	0	0	88	0	14
Mvmt Flow	13	155	8	10	225	25	29	10	10	10	2	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	9.1	8.5	9.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	7%	4%	47%
Vol Thru, %	20%	88%	87%	12%
Vol Right, %	20%	5%	10%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	148	218	17
LT Vol	24	11	8	8
Through Vol	8	130	189	2
RT Vol	8	7	21	7
Lane Flow Rate	48	176	260	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0.22	0.305	0.035
Departure Headway (Hd)	5.115	4.492	4.229	6.282
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	700	802	851	570
Service Time	3.145	2.509	2.243	4.315
HCM Lane V/C Ratio	0.069	0.219	0.306	0.035
HCM Control Delay	8.5	8.8	9.1	9.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.8	1.3	0.1

HCM 6th TWSC
6: Wells Street & Root Street

07/20/2022

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	137	1	3	214	4	3	1	3	8	0	1
Future Vol, veh/h	8	137	1	3	214	4	3	1	3	8	0	1
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	35	0	0	10	25	33	0	0	38	0	0
Mvmt Flow	9	161	1	4	252	5	4	1	4	9	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	258	0	0	162	0	0	443	446	162	446	444	256
Stage 1	-	-	-	-	-	-	180	180	-	264	264	-
Stage 2	-	-	-	-	-	-	263	266	-	182	180	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.48	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.842	4	3.3
Pot Cap-1 Maneuver	1318	-	-	1429	-	-	476	510	888	466	511	788
Stage 1	-	-	-	-	-	-	755	754	-	669	694	-
Stage 2	-	-	-	-	-	-	679	692	-	743	754	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1317	-	-	1429	-	-	471	504	888	459	505	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	504	-	459	505	-
Stage 1	-	-	-	-	-	-	749	748	-	663	691	-
Stage 2	-	-	-	-	-	-	676	689	-	733	748	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			11.1			12.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	1317	-	-	1429	-	-	481
HCM Lane V/C Ratio	0.014	0.007	-	-	0.002	-	-	0.022
HCM Control Delay (s)	11.1	7.8	0	-	7.5	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

HCM 6th TWSC
7: Root Street & Site Access

07/20/2022

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	25	147	206	14	1	3
Future Vol, veh/h	25	147	206	14	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	29	9	0	0	0
Mvmt Flow	26	155	217	15	1	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	232	0	-	0	432 225
Stage 1	-	-	-	-	225 -
Stage 2	-	-	-	-	207 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1348	-	-	-	584 819
Stage 1	-	-	-	-	817 -
Stage 2	-	-	-	-	832 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1348	-	-	-	572 819
Mov Cap-2 Maneuver	-	-	-	-	572 -
Stage 1	-	-	-	-	800 -
Stage 2	-	-	-	-	832 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1348	-	-	-	739
HCM Lane V/C Ratio	0.02	-	-	-	0.006
HCM Control Delay (s)	7.7	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	2	2	4	25	50	16
Future Vol, veh/h	2	2	4	25	50	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	100	50	32	12	0
Mvmt Flow	2	2	4	26	53	17

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	96	62	70	0	0
Stage 1	62	-	-	-	-
Stage 2	34	-	-	-	-
Critical Hdwy	6.4	7.2	4.6	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	4.2	2.65	-	-
Pot Cap-1 Maneuver	908	785	1275	-	-
Stage 1	966	-	-	-	-
Stage 2	994	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	905	785	1275	-	-
Mov Cap-2 Maneuver	905	-	-	-	-
Stage 1	963	-	-	-	-
Stage 2	994	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1275	-	841	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s)	7.8	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC
 9: Princeton Avenue & South Site Access

07/20/2022

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	5	2	16	24	15	37
Future Vol, veh/h	5	2	16	24	15	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	42	53	0
Mvmt Flow	5	2	17	25	16	39

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	95	36	55	0	0
Stage 1	36	-	-	-	-
Stage 2	59	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	909	1042	1563	-	-
Stage 1	992	-	-	-	-
Stage 2	969	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	899	1042	1563	-	-
Mov Cap-2 Maneuver	899	-	-	-	-
Stage 1	981	-	-	-	-
Stage 2	969	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1563	-	936	-	-
HCM Lane V/C Ratio	0.011	-	0.008	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Capacity Analysis Summary Sheets
2028 Projected Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings

1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	556	9	44	945	35	29
Future Volume (vph)	556	9	44	945	35	29
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Lane Width (ft)	10	10	10	10	16	16
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	115		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			80		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		0.99	
Frt	0.998				0.939	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	3115	0	1195	3198	1627	0
Flt Permitted			0.396		0.973	
Satd. Flow (perm)	3115	0	497	3198	1627	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3				30	
Link Speed (mph)	30			30	30	
Link Distance (ft)	679			1450	1670	
Travel Time (s)	15.4			33.0	38.0	
Confl. Peds. (#/hr)		2	2			4
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	11%	41%	10%	3%	14%
Bus Blockages (#/hr)	4	4	0	4	0	0
Parking (#/hr)					0	0
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	0	46	984	66	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	37.0		37.0	37.0	28.0	
Total Split (s)	37.0		37.0	37.0	28.0	
Total Split (%)	56.9%		56.9%	56.9%	43.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effect Green (s)	33.0		33.0	33.0	24.0	
Actuated g/C Ratio	0.51		0.51	0.51	0.37	

Lanes, Volumes, Timings
 1: Normal Avenue & Pershing Road

07/20/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.37		0.18	0.61	0.11	
Control Delay	6.8		11.0	13.4	9.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	6.8		11.0	13.4	9.2	
LOS	A		B	B	A	
Approach Delay	6.8			13.3	9.2	
Approach LOS	A			B	A	
Queue Length 50th (ft)	35		9	135	9	
Queue Length 95th (ft)	60		27	190	31	
Internal Link Dist (ft)	599			1370	1590	
Turn Bay Length (ft)			115			
Base Capacity (vph)	1582		252	1623	619	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.37		0.18	0.61	0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	60 (92%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	10.9
Intersection LOS:	B
Intersection Capacity Utilization	46.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: Normal Avenue & Pershing Road



HCM 6th TWSC
2: Princeton Avenue & Pershing Road

07/20/2022

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑↑	
Traffic Vol, veh/h	569	16	13	947	42	51
Future Vol, veh/h	569	16	13	947	42	51
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	12	0	0
Mvmt Flow	587	16	13	976	43	53

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	605	0	1111
Stage 1	-	-	-	-	597
Stage 2	-	-	-	-	514
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	983	-	206
Stage 1	-	-	-	-	518
Stage 2	-	-	-	-	571
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	981	-	203
Mov Cap-2 Maneuver	-	-	-	-	203
Stage 1	-	-	-	-	517
Stage 2	-	-	-	-	564

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	332	-	-	981	-
HCM Lane V/C Ratio	0.289	-	-	0.014	-
HCM Control Delay (s)	20.2	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0	-

HCM 6th AWSC
3: Wells Street & Pershing Road

07/20/2022

Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Vol, veh/h	607	13	74	951	9	38
Future Vol, veh/h	607	13	74	951	9	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	7	0	3	12	0	0
Mvmt Flow	646	14	79	1012	10	40
Number of Lanes	2	0	1	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	24.3	19	10.9
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3
Vol Left, %	19%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	94%	0%	100%	100%
Vol Right, %	81%	0%	6%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	405	215	74	476	476
LT Vol	9	0	0	74	0	0
Through Vol	0	405	202	0	476	476
RT Vol	38	0	13	0	0	0
Lane Flow Rate	50	430	229	79	506	506
Geometry Grp	7	8	8	7	7	7
Degree of Util (X)	0.102	0.791	0.411	0.134	0.809	0.544
Departure Headway (Hd)	7.32	6.617	6.455	6.142	5.756	3.872
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	489	547	557	587	627	936
Service Time	5.077	4.358	4.196	3.842	3.492	1.572
HCM Lane V/C Ratio	0.102	0.786	0.411	0.135	0.807	0.541
HCM Control Delay	10.9	30	13.7	9.8	28.4	11.1
HCM Lane LOS	B	D	B	A	D	B
HCM 95th-tile Q	0.3	7.4	2	0.5	8.2	3.4

HCM 6th AWSC
4: Normal Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	179	25	10	234	14	24	25	1	15	19	22
Future Vol, veh/h	8	179	25	10	234	14	24	25	1	15	19	22
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	3	4	0	12	0	0	4	0	20	5	14
Mvmt Flow	9	211	29	12	275	16	28	29	1	18	22	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	10.2	8.9	9
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	48%	4%	4%	27%
Vol Thru, %	50%	84%	91%	34%
Vol Right, %	2%	12%	5%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	212	258	56
LT Vol	24	8	10	15
Through Vol	25	179	234	19
RT Vol	1	25	14	22
Lane Flow Rate	59	249	304	66
Geometry Grp	1	1	1	1
Degree of Util (X)	0.087	0.312	0.378	0.098
Departure Headway (Hd)	5.313	4.501	4.481	5.374
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	670	796	801	663
Service Time	3.378	2.541	2.519	3.439
HCM Lane V/C Ratio	0.088	0.313	0.38	0.1
HCM Control Delay	8.9	9.6	10.2	9
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.3	1.3	1.8	0.3

HCM 6th AWSC
5: Princeton Avenue & Root Street

07/20/2022

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	180	21	18	211	17	15	3	12	18	5	8
Future Vol, veh/h	5	180	21	18	211	17	15	3	12	18	5	8
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	20	2	19	0	12	6	27	0	0	11	0	0
Mvmt Flow	6	205	24	20	240	19	17	3	14	20	6	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	9.5	8.8	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	2%	7%	58%
Vol Thru, %	10%	87%	86%	16%
Vol Right, %	40%	10%	7%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	206	246	31
LT Vol	15	5	18	18
Through Vol	3	180	211	5
RT Vol	12	21	17	8
Lane Flow Rate	34	234	280	35
Geometry Grp	1	1	1	1
Degree of Util (X)	0.051	0.303	0.335	0.051
Departure Headway (Hd)	5.425	4.656	4.317	5.253
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	659	773	833	681
Service Time	3.465	2.678	2.338	3.292
HCM Lane V/C Ratio	0.052	0.303	0.336	0.051
HCM Control Delay	8.8	9.7	9.5	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	1.3	1.5	0.2

HCM 6th TWSC
6: Wells Street & Root Street

07/20/2022

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	203	3	6	225	7	11	1	10	8	2	10
Future Vol, veh/h	4	203	3	6	225	7	11	1	10	8	2	10
Conflicting Peds, #/hr	11	0	0	0	0	11	3	0	0	0	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	12	0	0	0	0	13	0	0
Mvmt Flow	4	226	3	7	250	8	12	1	11	9	2	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	269	0	0	229	0	0	514	519	228	521	516	268
Stage 1	-	-	-	-	-	-	236	236	-	279	279	-
Stage 2	-	-	-	-	-	-	278	283	-	242	237	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.23	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.617	4	3.3
Pot Cap-1 Maneuver	1306	-	-	1351	-	-	474	464	816	449	466	776
Stage 1	-	-	-	-	-	-	772	713	-	704	683	-
Stage 2	-	-	-	-	-	-	733	681	-	738	713	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1292	-	-	1351	-	-	461	455	816	434	457	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	455	-	434	457	-
Stage 1	-	-	-	-	-	-	769	710	-	694	672	-
Stage 2	-	-	-	-	-	-	714	670	-	724	710	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			11.6			11.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	574	1292	-	-	1351	-	-	558
HCM Lane V/C Ratio	0.043	0.003	-	-	0.005	-	-	0.04
HCM Control Delay (s)	11.6	7.8	0	-	7.7	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

HCM 6th TWSC
7: Root Street & Site Access

07/20/2022

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	3	192	233	1	14	25
Future Vol, veh/h	3	192	233	1	14	25
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	12	0	0	0
Mvmt Flow	3	202	245	1	15	26

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	248	0	0	456	248
Stage 1	-	-	-	248	-
Stage 2	-	-	-	208	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1330	-	-	566	796
Stage 1	-	-	-	798	-
Stage 2	-	-	-	832	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1327	-	-	562	794
Mov Cap-2 Maneuver	-	-	-	562	-
Stage 1	-	-	-	794	-
Stage 2	-	-	-	830	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1327	-	-	-	692
HCM Lane V/C Ratio	0.002	-	-	-	0.059
HCM Control Delay (s)	7.7	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	3	1	58	17	2
Future Vol, veh/h	16	3	1	58	17	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	33	100	2	6	0
Mvmt Flow	17	3	1	61	18	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	82	19	20	0	0
Stage 1	19	-	-	-	-
Stage 2	63	-	-	-	-
Critical Hdwy	6.4	6.53	5.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.597	3.1	-	-
Pot Cap-1 Maneuver	925	976	1139	-	-
Stage 1	1009	-	-	-	-
Stage 2	965	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	924	976	1139	-	-
Mov Cap-2 Maneuver	924	-	-	-	-
Stage 1	1008	-	-	-	-
Stage 2	965	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1139	-	932	-	-
HCM Lane V/C Ratio	0.001	-	0.021	-	-
HCM Control Delay (s)	8.2	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th TWSC
 9: Princeton Avenue & South Site Access

07/20/2022

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	38	16	4	21	15	5
Future Vol, veh/h	38	16	4	21	15	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	10	13	0
Mvmt Flow	40	17	4	22	16	5

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	49	19	21	0	0
Stage 1	19	-	-	-	-
Stage 2	30	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	965	1065	1608	-	-
Stage 1	1009	-	-	-	-
Stage 2	998	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	962	1065	1608	-	-
Mov Cap-2 Maneuver	962	-	-	-	-
Stage 1	1006	-	-	-	-
Stage 2	998	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	990	-	-
HCM Lane V/C Ratio	0.003	-	0.057	-	-
HCM Control Delay (s)	7.2	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-